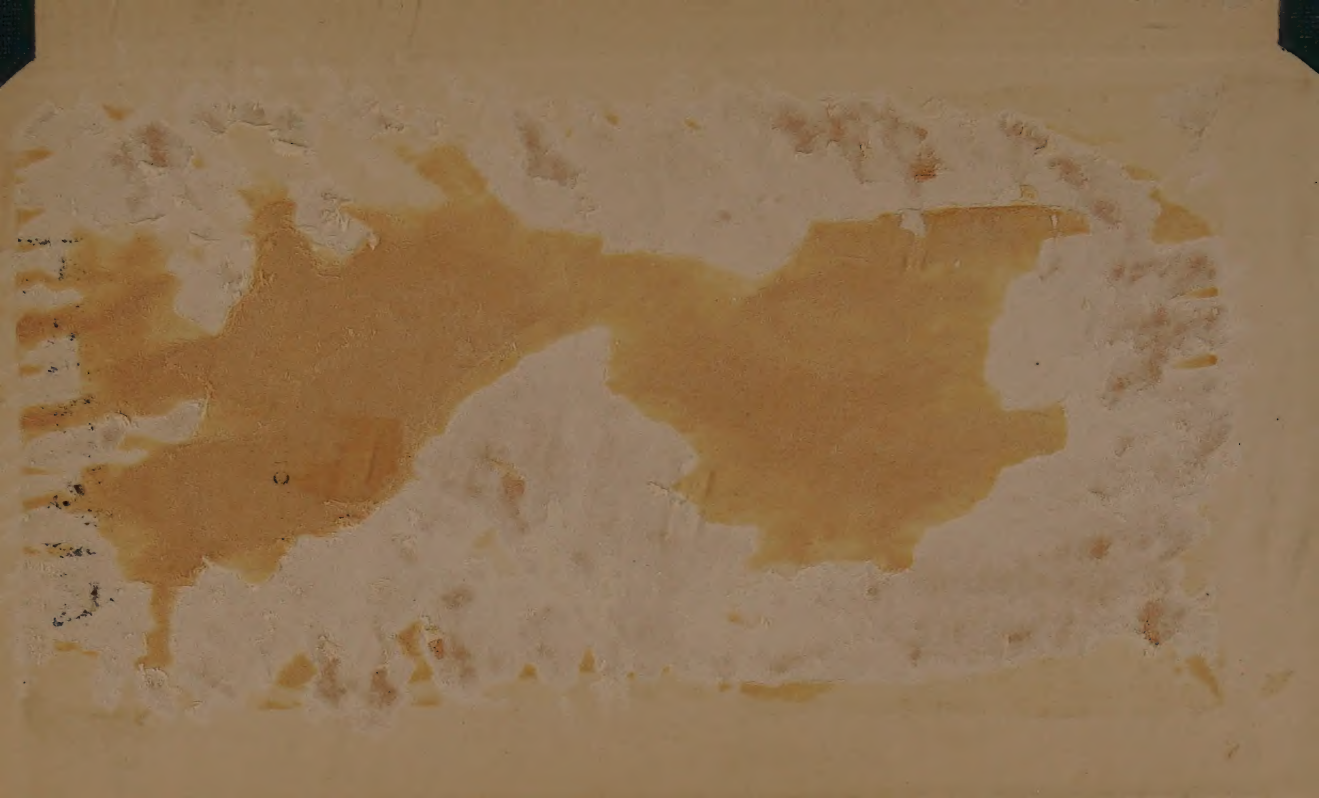

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EVOLUTION.

An Investigation and a Criticism

By

TH. GRAEBNER,

Concordia Seminary, St. Louis, Mo.

THIRD EDITION.

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Species tot sunt, quot diversas formas ab initio produxit Infinitum Ens.

Linné.

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To the Memory of

my teacher (New Ulm, 1892)

John Schaller

Educator, Theologian, Student of Science

these chapters are dedicated

by

The Author.

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PREFATORY.

I first read Charles Darwin's "Origin of Species" in the library of my sainted uncle, John Schaller, at New Ulm, Minnesota, in 1892. I did not comprehend all of it then, a cause, to me, of considerable chagrin, for which I later found some consolation in the opinion of Dr. Frederick Lynch, who pronounces Darwin's epochal work "one of the two most difficult books in the English language." But like many others, I understood enough of Darwin's book to catch glimpses of the grandeur of the conception which underlies its argumentation. It was then that my beloved uncle, out of that wide and accurate reading which so frequently astonished his friends, and with that penetrating dialectic of his, opened my eyes to certain fallacies in Darwin's argument, especially to the fatal weakness of the chapter on Instinct. The reading of St. George Mivart's book "The Genesis of Species" later convinced me of the accuracy of my uncle's judgment. But the fascination of the subject persisted, and for a time Herbert Spencer's "Synthetic Philosophy," by the comprehensiveness of its induction and its vast array of data, exercised its thrall. Alfred Russel Wallace's "Darwinism," Huxley's "Lectures on Evolution," Tyndall's "The Beginning of Things," Grant Allen's "The Evolutionist at Large," Eimer's "Orthogenesis," Clodd's "Story of Creation," occupied me in turn, until the apodictic presentation of John Fiske's Essays on Darwinism, no less than the open and haggard opposition to Christianity which prevails in Huxley's "Science and Hebrew Tradition"

and in Spencer's chapters on "The Unknowable" (so the Synthetic Philosophy denominates God), caused a revulsion of sentiment,— the anti-religious bias of evolution standing forth the clearer to my mind, the longer I occupied myself with the subject.

I determined to investigate for myself the data on which the speculations whose mazes I had trod these years were built up. The leisure hours of three years were devoted to the study of first-hand sources of Comparative Religion. The result of this research was deposited in two articles contributed to the *Theological Quarterly* in 1906 and 1907. I fear that the forbidding character of the foot-notes served as an effective deterrent to the reading of these articles. I have now given, in several chapters of this little volume, in popular language the argument against evolution to be derived from the study of Religion. The reading of Le Conte's and Dana's text-books of geology and various other treatises supplied the data on palaeontology embodied in the first chapters of the book. The notable circulus in concludendo ("begging the question") of which evolutionists here are guilty was first pointed out to me by Prof. Tingelstad of Decorah, Iowa, who was in 1908 taking a course in Evolution at Chicago University, and who called on me for discussion of the doctrine as he received it from "head-quarters."

As an excursus in the subject of Pedagogy, I have treated in my Seminary lectures the past years, under the head of natural sciences, the argument against evolution, and the outlines of these lectures have furnished the framework for the present volume. It is hoped that especially our young men and women who take courses at our universities will examine the case against the fascinating and in some respects magnificent conception of evolution as this case is presented in the following chap-

ters. I realize that they, as well as intelligent readers generally, may not meet with confidence the statements of a theologian on a scientific question, least of all when he essays to treat such a question from the standpoint of science. He is presumed to be at home in theology, but a stranger in the domain of geology, astronomy, and biology. It is for the purpose of obtaining a hearing at all that these introductory remarks are written. But the argument must stand on its own merits. The writer will now retire to the background. The facts shall speak.

TH. G.

FOREWORD TO SECOND EDITION.

This treatise issued from the press in May, 1921, and was accorded an exceedingly cordial reception by the reviewers, both in Lutheran journals of every Synodical connection and in the organs of other Christian denominations. During the past six months the discussion of evolution has entered the forefront of interest among the American people, and the monthly magazines and Sunday papers, quickly sensing the popular demand, have printed countless articles and editorials on the subject. It was fortunate for our book that it found a market so well prepared for it. The publisher has now requested that the text be revised and brought up-to-date wherever necessary, as a second edition is about to issue. Aside from the correction of a few typographical errors no changes have been made in the text matter. However, an index of subjects and authors has been added and in an appendix the most recent phase of the controversy has received attention.

As supplementary reading to Chapter Eleven we would suggest to those acquainted with the principles of

physics and astronomy, a valuable apologetic published last year, Dr. L. F. Gruber's *Whence Came the Universe?* (R. G. Badger, Boston). New and unexpected confirmation of our attitude with reference to the age of the earth's strata (pp. 57-61) has come in Dr. Geo. M. Price's *The Fundamentals of Geology* (Pacific Press Publishing Association, Mountain View, Calif.).

March 31, 1922. TH. G.

EVOLUTION.

CHAPTER ONE.

An Outline of the Theory.

Definition.

Evolution is a name comprehending certain theories which seek to account for all operations of nature as carried on according to fixed laws by means of forces resident in matter. Prof. J. LeConte of the University of California defines evolution as: "Continuous progressive change according to certain laws and by means of resident forces." Evolution is a theory, a philosophy, it is not a science. The theory is called *organic* evolution in its relation to living forms (plant and animal life), *cosmic* evolution, inasmuch as attempts have been made to account by certain laws and the working of resident forces for the development of the universe,—the earth, the sun, and the starry heavens. Also the development of society, of religion, morals, politics, art, and mechanical inventions is accounted for on the theory that there are forces which, acting according to certain laws, have through many changes made human life and institutions as we see them today.

The doctrine of Evolution briefly stated, is as follows: That in some infinitely remote period in the past, how or from whence science does not affirm, there appeared matter and force; that within matter and in association with force there also appeared a primordial cell, how or from whence no man knoweth, in which there was a spark of life; and that from this cell all things animate have emerged, being controlled by certain laws variously stated by various evolutionists; that

these laws in connection with the modifying influences of environment (surroundings,—soil, climate, etc.) account for and explain the various species that have existed in the past and now exist upon earth, man included. That there are no gaps in the process but that there is demonstrable a steady ascent from lower to higher (simple to more complex) forms of life, until man is reached, the acknowledged highest product of evolution.

The extreme evolutionists hold that all the power and potency of the universe was stored up in that primordial cell, and that all things have been worked out without any superintending agency other than the forces resident in matter. Every operation of God is ruled out, or deemed unnecessary. This is sometimes called atheistic evolution.

The theistic evolutionist ("theistic" from "theism," the belief in a personal God) makes place for God in the beginning and all along the line of development, as overlooking the process, perhaps reinforcing and to a certain extent directing the energy, but not interfering with the fixed law or rule of evolution. According to theistic evolution, God did not create plants and animals as separate species (as related in Genesis 1) but created matter as a crude form and placed it under certain laws, by which this matter was, during untold ages, gradually evolved into worlds. That out of this matter, called inorganic, plants came into existence, from some germ or property existing in matter. The origin of animal life is explained in various ways by the so-called theistic evolutionists. Some hold that the primordial plant life contained potentially the lowest and simplest principles of animal life, and from it the simplest animal forms were evolved; that from these latter were evolved forms a little higher, until, after long ages, all the gradations were passed through until man,

the highest form, was the result. Others believe that there is such an essential difference between plants and animals that the latter could not have come from the former, that there must be a new start on the animal side of life. Therefore they claim that when the evolutionary development of matter reached a certain stage, God appeared on the scene and endowed certain forms with the principle of animal life, in its lowest elements. These lowest forms of animal life then entered upon a series of evolutionary growth, each lower form evolving one a little more complex, each series gaining the use of and developing organs which existed essentially in the lower form but were small, imperfect, and useless, because not needed. Thus the hand and arm in man are structurally or essentially the same as the leg of the brute, the wing of the bird, the flipper of the whale, and the fin of the fish; and the endeavor to adapt itself to the water caused the bird to develop a fin, as by a similar process the fore-leg of brutes developed into the human arm and hand.

For our present consideration, we need not distinguish between atheistic and theistic evolution, as the latter is subject to the fundamental objections urged against evolution in general, and is, like atheistic evolution, without a single fact to support it and in direct contradiction of all that is known of the laws in operation now, and as far back as knowledge penetrates. Moreover, so-called "theistic" evolution is universally approved by infidels and skeptics and is used by them as a favorite means of assault on revealed Truth.

Historical Review.

While in our own day the names of certain English and German scientists (Darwin, Spencer, Huxley, Tyndall, Romanes, Buechner, Vogt, Haeckel) are inseparably

connected with a history of this hypothesis, its roots are found far back in the early ages of Greek philosophy. A theory of evolutionary development was first propounded by Greek thinkers living about 600 years B. C. The human mind is ever on the search for unifying principles, principles which account for entire groups of natural phenomena, and not for isolated phenomena only. The Greek mind sought a principle by which to account for the manifold and diverse forms of life in nature. Whence do all things come? How have they come to be what they are? Questions about the nature of the universe in which we live have been asked from the very beginning. The moment the human mind began to reflect the notion that the vegetation which covers the earth, the animals which inhabit it, the rocks and hills, the mountains and valleys which constitute its physical features, may have undergone changes in past time, and that all the phenomena which constitute the animal, vegetable and mineral worlds as they now exist, are but modifications of other forms which have had their day and their philosophy, the idea of development became prominent. The early Greek philosophers were the first to attempt answers to these problems. Many of them held that all things natural sprang from what they called the original elements—fire, air, earth, water. Anaximander held that animals were begotten from the earth by means of heat and moisture; and that man was developed from other beings different in form. Empedocles had a fantastic theory, viz., that the various parts of man and animals at first existed independently, and that these—for instance, arms, legs, feet, eyes, etc., gradually combined—perhaps after the manner in which automobiles are assembled; and that these combinations became capable of existing and even of propagating and reproducing themselves. Anaxagoras was of opinion that animals and plants

sprang from the earth by means of germs carried in the atmosphere which gave fecundity to the earth. Aristotle held opinions not very unlike those of our own day. All of which goes to show that speculation about the origin of the universe and the why and wherefore of living things did not come into existence with the Darwinian hypothesis and that the doctrine of descent with modification as an explanation of all biological phenomena antedates by over two thousand years the publication of the "Origin of Species."

In modern times a theory of development was first suggested by Goethe in his *"Italienische Reise."* Acting under the same mental urge for seeing diverse forms under a unifying principle, Goethe looked for the original form of plant life, the *Urpflanze,* the plant which would be at once simple enough to stand for a type of all plants, and yet susceptible to variation in so many directions that all plants might derive from it their origin. Goethe has also clothed this conception in poetic form.

The first philosophic statement of the hypothesis is found in Immanuel Kant's *"Kritik der Urteilskraft,"* 1790. In paragraph 80 we find a discussion of the similarity between so many species of animals, not only in their bony structure, but also in the arrangement of their other parts, a similarity which, says Kant, "casts a ray of hope," that all forms may be traced back to original simple forms, to "a generation from a common ancestor," rising from the lowest forms to man, "according to mechanical laws." Kant assumes that, for instance, certain aquatic animals by and by formed into amphibia, and from these after some generations were produced land animals. A treatise of the same philosopher entitled *"Presumable Origin of Humanity"* suggests that man in the early age of the world was developed from "mere animal creatures." Even a universal law of world-formation (cosmic evolu-

tion) was set forth by Kant in a work which he published anonymously in 1775.

In its relations to animal life a development theory was first clearly set forth by Karl Ernst von Baer (died 1876). In his *"Entwickelungsgeschichte der Tiere"* (1828), the author explains "Entwickelung" as a progress from simple to complex forms. He believes that in evolution there is a fundamental idea that "goes through all the forms of cosmic and animal development." A predecessor of von Baer had been the Frenchman, Lamarck. From von Baer, Herbert Spencer, about 1850, adopted the definition of evolution.

The hypothesis entered a new phase through Charles Darwin's epochmaking work: *"The Origin of Species."* The keynote of Darwin's theory is Natural Selection, by which term the development of all living forms is referred to the working of certain laws which in the reproduction of plants and animals preserved those individuals which were best fitted to survive the struggle for existence. The Darwinian theory may be summarized thus:

The Darwinian Hypothesis.

1. Every kind of animal and plant tends to increase in numbers in a geometrical progression.

2. Every kind of animal and plant transmits a general likeness, *with individual differences,* to its offspring.

3. Past time has been practically infinite.

4. Every individual has to endure a very severe struggle for existence, owing to the tendency to geometrical increase of all kinds of animals and plants, while the total animal and vegetable population (man and his agency excepted) remains almost stationary.

5. Thus, every variation of a kind tending to save the life of the individual possessing it, or to enable it more surely to propagate its kind, will in the long run be

preserved and will transmit its favorable peculiarity to some of its offspring, which peculiarity will thus become intensified till it reaches the maximum degree of utility. On the other hand, individuals presenting unfavorable peculiarities will be ruthlessly destroyed (*Survival of the Fittest*),

The basis of the theory then is that animals and plants multiply very rapidly and, second, that the offspring always vary slightly from the parents, though generally very closely resembling them. Mr. Alfred Russel Wallace says: "From the first fact or law there follows, necessarily, a constant struggle for existence; because while the offspring always exceeds the parents in number, generally to an enormous extent, yet the total number of living organisms in the world does not, and can not, increase year by year. Consequently every year, on the average, as many die as are born, plants as well as animals; and the majority die premature deaths. They kill each other in a thousand different ways; they starve each other by some consuming the food that others want; they are destroyed largely by the powers of Nature—by cold and heat, by rain and storm, by flood and fire. There is thus a perpetual struggle among them which shall live and which shall die; and this struggle is tremendously severe, because so few can possibly remain alive — one in five, one in ten, often only one in a hundred or even in a thousand.

"Then comes the question, Why do some live rather than others? If all the individuals of each species were exactly alike in every respect, we could only say it is a matter of chance. But they are not alike. We find that they vary in many different ways. Some are stronger, some swifter, some hardier in constitution, some more cunning. An obscure color may render concealment more easy for some, keener sight may enable others to

discover prey or escape from an enemy better than their fellows. Among plants the smallest differences may be useful or the reverse. The earliest and strongest shoots may escape the slug; their greater vigor may enable them to flower and seed earlier in a wet autumn; plants best armed with spines or hairs may escape being devoured; those whose flowers are most conspicuous may be soonest fertilized by insects. We can not doubt that, on the whole, any beneficial variations will give the possessors of it a greater probability of living through the tremendous ordeal they have to undergo. There may be something left to chance, but on the whole *the fittest will survive.*" *("Darwinism" p. 7).*

The same writer gives a probable instance of the working of *Natural Selection* in the origin of certain aquatic birds called dippers. He says: "An excellent example of how a limited group of species has been able to maintain itself by adaptation to one of these 'vacant places' in Nature, is afforded by the curious little birds called dippers or water-ouzels, forming the genus *Cinclus* and the family *Cinclidae* of naturalists. These birds are something like small thrushes, with very short wings and tail, and very dense plumage. They frequent, exclusively, mountain torrents in the northern hemisphere, and obtain their food entirely in the water, consisting, as it does, of water-beetles, caddis-worms, and other insect-larvae, as well as numerous small fresh-water shells. These birds, although not far removed in structure from thrushes and wrens, have the extraordinary power of flying under water; for such, according to the best observers, is their process of diving in search of their prey; their dense and somewhat fibrous plumage retaining so much air that the water is prevented from touching their bodies or even from wetting their feathers to any great extent. Their powerful feet and long curved claws enable them

to hold on to stones at the bottom, and thus to retain their position while picking up insects, shells, etc. As they frequent chiefly the most rapid and boisterous torrents, among rocks, waterfalls, and huge boulders, the water is never frozen over, and they are thus able to live during the severest winters. Only a very few species of dipper are known, all those of the old world being so closely allied to our British bird that some ornithologists consider them to be merely local races of one species; while in North America and the northern Andes there are two other species.

"Here, then, we have a bird, which, in its whole structure, shows a close affinity to the smaller typical perching birds, but which has departed from all its allies in its habits and mode of life, and has secured for itself a place in Nature where it has few competitors and few enemies. We may well suppose,* that, at some remote period, a bird which was perhaps the common and more generalized ancestor of our thrushes, warblers, wrens, etc., had spread widely over the great northern continent, and had given rise to numerous varieties adapted to special conditions of life. Among these some took to feeding on the borders of clear streams, picking out such larvae and mollusks as they could reach in shallow water. When food becomes scarce they would attempt to pick them out of deeper and deeper water, and while doing this in cold weather many would become frozen and starved. But any which possessed denser and more hairy plumage than usual, which was able to keep out the water, would survive; and thus a race would be formed which would depend more and more on this kind of food. Then, following up the frozen streams into the mountains, they would be able to live there during the winter; and as such places afforded them much protection from enemies and ample shelter for

* Note characteristic phrase "We may suppose that,—." G.

their nests and young, further adaptations would occur, till the wonderful power of diving and flying under water was acquired by a true land-bird." (*"Darwinism,"* p. 81-82.)

Lines of Evidence.

The evolutionary hypothesis (both in its atheistic and theistic or "Christian" form) is understood to rest on the following lines of proof:

1. *Primary:* The evidence of palaeontology (the study of fossil remains in the rocks). The surface of the earth underneath the top soil consists of layers of rock. Some of them are made up of lime deposits, others of the shells of shell-fish, others of sand-stone, others of dead trees of the forest (coal), all of them turned hard by the pressure of the weight lying on top of them. Besides these sedimentary rock there are formations like granite, showing the influence of heat. Digging among the sedimentary rock (limestone, sand-stone, principally) we come across preserved remains of all sorts of animals; some just like those which live to-day, some similar but somewhat different, others quite dissimilar from living animals of our day. These are the fossils. Now, evolutionists assert that the oldest and simplest animal and plant remains are found in the oldest layers of rock. This is said to prove that in the history of plants and animals on earth, the simplest forms are the oldest and that later the more complex forms were developed from these. LeConte states the matter thus: "The farther back in time we go, the simpler the forms of animal and plant life become, and these forms occur in the order of their origination, just as if they were developed one from another."

2. *Corroborative:* a) The Argument from Morphology (Structure). The resemblance of the structure of

various animal types is asserted to imply a community of descent. "Large groups of species, whose habits are widely different, present certain fundamental likenesses of structure. The arms of men and apes, the fore-legs of quadrupeds, the paddles of whales, the wings of birds, the breast-fins of fishes, are constructed on the same pattern, but altered to suit their several functions. Nearly all mammals, from the long-necked giraffe to the short-necked elephant, have seven neck-bones; the eyes of the lamprey are moved by six muscles which correspond exactly to the six which work the human eye; all insects and crustacea—moth and lobster, beetle and cray-fish—are alike composed of twenty segments; the sepals, petals, stamens, and pistils of a flower are all modified leaves arranged in a spire." (Clodd, *"The Story of Creation,"* p. 102.) These *resemblances* are looked upon as evidence of a common origin.

b) The Argument from Embryology. The individual animal in embryonic development passes through temporary stages which are similar to permanent conditions in some of the lower forms in the same group. Evolutionists believe that these forms were actually possessed by the ancestors of these animals in the course of their evolution. They hold that the changes which take place in the embryos epitomize the series of changes through which the ancestral forms passed. Because the embryos of some four-footed animals have gill-slits, this is pointed out as evidence that land animals are evolved from fishes.

c) Geographical Distribution. In geological time, natural barriers have sprung up which separated the species which have since developed. In this way the existence of marsupials (pouched animals—kangaroo, opossum) on certain limited areas, the limitation of certain plants to certain islands, etc., are explained.

d) Classification. The so-called Tree of Life. All living forms can be arranged in a diagram called the Tree of Life. The Tree has a short trunk, indicating common origin of the living from the non-living, and is divided into two large trunks representing plants and animals respectively. "From each of these start large branches representing classes, the larger branches giving off smaller branches representing families, and so on with smaller and smaller branches representing orders and genera, until we come to leaves as representing species, the height of the branch from which they are hanging indicating their place in the growth of the great life-tree." (Clodd, *"Story of Creation,"* p. 103.) There is an exact gradation from the lowest life forms to the highest. First such simple forms as the sponges and corals, then, through the worms, crabs, oysters, and snail to the fish, and thence through amphibia, reptiles, beasts of prey, ungulates (hoofed animals) and apes to man. Evolutionists say that in this gradation of life we see illustrated the evolution of complex from simple forms.

The Descent of Man.

According to the evolutionary hypothesis man is related to the animal kingdom by descent from a brute ancestor, who, apelike in appearance, is the common ancestor of ape and man. The evidence of such derivation is believed to be:

1. Rudiments of structure which were useful in some brute ancestor. There remain in man a few elementary muscles for twitching the skin, as in the forehead; and it is pointed out that many animals have such muscles at the present time, and it is argued that the ability of some men to move the whole scalp points to the existence of muscles with such function in our brute ancestors. The vermiform appendix in man is termed rudi-

mentary, being but a remnant of the much longer and more complex appendix of the same nature in living animals today.

2. Embryonic Development. Because the young of all animals resemble one another while in the embryo stage, and since such resemblances are found in man, it is concluded that the evolution of man from some related animal form must be accepted as the most reasonable explanation.

3. Some diseases are common to animals and man (tuberculosis, cholera, hydrophobia, etc.).

4. The similarity in structure of man and the apes.

5. The fossil remains of man. Certain skulls and leg bones have been found which are said to represent forms higher than the ape and lower than man. On the strength of such finds it is said that the "missing link" has now been supplied.

The Nebular Hypothesis.

The Frenchman de La Place (1827) first promulgated in modern terminology the theory once held by Greek philosophers, that the earth and the system in which it is a member originated from a primitive cosmic vapor or universal fire-mist filling all space with infinitely small atoms. In this homogeneous mass *motion* originated, resulting in a concentration at one point. This condensation resulted in heat and light. The planetary system at first consisted of a huge gas-ball which gradually cooled, contracting into a molten mass which under the influence of centrifugal force began to rotate. This rotation became more rapid as the mass condensed, throwing off the planets, in which the process was repeated (the moons being cast off), until the earth became sufficiently cool to sustain life.

The Origin of Life.

When asked about the origin of life on earth, the evolutionists generally reply that this is not a question for science but for philosophy to answer. However, the question comes with such insistent force that the biologist finds himself constrained to offer some explanation of the origin of the simplest plant and animal life after the globe had, according to the hypothesis, sufficiently cooled to present areas in which life might arise. Necessarily, the assumption must be that life was generated out of lifeless matter. Huxley says: "If the hypothesis of evolution be true, living matter must have arisen from not-living matter, for by the hypothesis, the condition of the globe was at one time such that living matter could not have existed on it, life being entirely incompatible with a gaseous state." (The earth having been a ball of gases at the time.) Tyndall is a little more specific; he says that the combination of electrical and chemical forces acting on the primal ooze caused germs of life to originate in small bubble-like forms, (vesicles). His words are: "The first step in the creation of life upon this planet was a chemico-electric operation by which simple germinal vesicles were produced." The vesicles consisted of protoplasm, the simple substance (white-of-egg) which exists in the cells of animal and vegetable tissues, and which is composed of oxygen, carbon, hydrogen, nitrogen and traces of other elements. From this original protoplasm the great variety of living things has been developed.

The Bearing of Evolution on Christianity.

It is evident that the evolutionary theory not only contradicts the Bible story of creation but, if true, deprives Christianity of every claim of being the true religion. If all things have come into being through the action of

forces residing in matter then the world did not come into being through a divine fiat or command. As Haeckel says: *"Every supernatural creation is completely excluded."* (Quoted by John Fiske in *"A Century of Science,"* 1899, p. 51.) Thomas Huxley is quite as definite: "Not only do I hold it to be proven that the story of the Deluge is a pure *fiction;* but I have no hesitation in affirming the same thing of the story of the Creation." (*"Science and Hebrew Tradition,"* 1896, p. 230.) Furthermore, the theory, by its implications, disposes summarily of the *immortality of the soul.* The belief in an immortal soul is termed by Haeckel as "quite excluded" by the bearing of evolution on the origin of man. The *fall of man* becomes a myth, since man has not fallen from a high estate but has through many ages of slow development arrived at the use of reason and the dominion over nature; not a perfect man, made in the image of God, but a cousin to the tail-less apes, newly accustomed to walking on two feet, is the ancestor of our race. Without a fall of man there is no possibility nor even a necessity of *redemption;* our entire Christian theology would be dealing with shadowy abstractions, unreasonable fears and hopes, and purposeless strivings. The belief of the Christian is to the evolutionist of some value as a phenomenon in the history of the mind, but not the slightest intrinsic value is recognized in any of the doctrines of Christian faith, not even in the belief in a *personal God.* God is, according to Spencer, *the Unknowable.* Naturally, there can not be *miracles,* since all processes in nature are conceived as governed by laws not directed by a Divine Intelligence but by forces resident in nature. Hence, too, there can be no inspired *revelation* of God, since that would presume not only the existence of a personal God but an intervention in natural processes of thought (miracle). John Fiske wrote: The hypothesis of inspiration "con-

veys most certainly a conception of Divine action as local, special, and transitory; and in so far as it does this, it bears the marks of that heathen mode of philosophy which was current when Christian monotheism arose." (*"Darwinism and Other Essays,"* 1895.) Evolution says: If there is a God we have no means of knowing Him; and what we know of nature certainly precludes the idea that God, if He exists, will concern Himself about man or break down the laws of nature even for an instant in his behalf. The conclusion is, that there is no inspired Bible. Nor indeed an absolute religion. All religious truths are considered relative, with no such distinction as true religion and false religion, since there is no criterion revealed (according to the theory) by which we can test a religion whether it be true or false. Finally, there is no absolute *standard of morals.* Moral truths, like the religious, are relative only. In other words, the teaching that "Christ has atoned for sin," is as little to be accepted as an absolute truth, as the command: "Thou shalt not steal" must be accepted as embodying an absolute rule of conduct. Clodd says in *"The Story of Creation"*: "Man by himself is not only unprogressive, he is also not so much immoral as unmoral. For where there is no society there is no sin! Therefore the bases of right and wrong lie in conduct towards one's fellow; the moral sense or conscience is the outcome of social relations, themselves the outcome of the need of living. . . . . While the lower instincts, as hunger, passion, and thirst for vengeance, are strong, they are not so enduring or satisfying as the higher feelings which crave for society and sympathy. And the yielding to the lower, however gratifying for the moment, would be followed by the feeling of regret that he had thus given way, and by resolve to act differently for the future. Thus at last man comes to feel, through acquired and perhaps inherited

habit, that it is best for him to obey his more persistent impulses. . . . . Morals are relative, not absolute; *there is no fixed standard of right and wrong* by which the actions of all men throughout all time are measured. . . . . That which man calls sin is shown to be more often due to his imperfect sense of the true proportion of things, and to his lack of imagination, than to his willfulness." Clodd adds that if conduct has been made to rest on *"supposed divine commands*(!) as to what man shall and shall not do," that is an assumption which at best serves to restrain the "brutal and ignorant."

J. B. Warren, a contributor to the *Presbyterian,* has well stated the effects of the evolutionary theory on religion and morals:

"Its legitimate tendency is to degrade mankind from that mental and moral dignity that is always recognized as belonging to them, and to place them on an essential level with the brute creation—even with the lowest forms of vegetable and animal existence. According to that theory, man differs from the lower organisms not in kind so much as in the degree of development. Mr. Darwin himself was troubled about the value of his own convictions, on the ground that his mind was evolved from that of lower animals. That is to say, he reckoned his own mental actions as valueless and untrustworthy, because of the essential identity between his mind and that of the lowest creatures that live in the mud of our swamps. Thus we see the legitimate tendency of this theory to degrade the mental dignity of man. And it also degrades the moral nature and faculties of man, and undermines the very foundations of moral and religious principle, in that it teaches that man is only a better developed brute—the natural result being that man is no more under moral obligation than the brute, or has no different basis of moral obligation from the brute, but only a better idea of

right and wrong, because on a higher plane in the process of evolution. It strikes at the root of the doctrine that men are, by their origin and nature, under peculiar and special obligations to God. In the words of the late Dr. Robert Patterson, such a theory tends to 'obliterate a belief in the divine origin and sanction of morality, and in the existence of a future life of rewards and punishments, and to promote the disorganization of society, and the degradation of man to the level of the brutes, living only under the laws of their brutal instincts.' Such a theory is dishonoring to man and offensive to God."

When these discrepancies between a world-view governed by the Christian's faith in Revelation and one governed by the theory of evolution are once clearly understood, there will be no need to inquire, why, on the one hand, enemies of the Bible in all ranks of life greeted with such joyous acclaim the principle announced by Darwin and, why, on the other hand, a chief purpose of Christian apologetics has become the demonstration that Christianity *is justified even by reason* in the world-view which it inculcates, and that, on the other hand, *the evolutionary hypothesis is contradicted by the facts of religion, of history, and of natural science.*

CHAPTER TWO.

Unexplained Origins.

The evolutionary scheme of development is, by its originators and defenders, accepted as a working hypothesis by which it is believed that the origin of all forms which matter has taken, and of the activities of living things, including man and human society, can be accounted for. It is an attempt to answer the old question, suggested to the thinking mind by a contemplation of nature: *Whence* these things? It is a theory of origins.

Now, a hypothesis, being "a theory, or supposition, provisionally employed as an explanation of phenomena," must be verified before it can be accepted as truth. Moreover, it can stand *even as a hypothesis* only if it meets the test of observation and experiment. If it can demonstrate its adaption to explain all the facts, it may, until another and better theory is propounded, be accepted as a theory. When it does not explain the facts, it must be modified or abandoned.

Since the evolutionary hypothesis is employed as an explanation of certain origins, a legitimate test of the theory is its adaptation to explain these origins. This test we now shall apply. We shall try to answer the question: Is the evolutionary theory entitled to the name of a working hypothesis? Is it able to account for those things which it is set forth by its spokesmen to account for? Does it account for the origin of the universe, of life, and of the various forms of life?

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The Origin of the Universe.

Scientists as a rule disclaim any intention to account, on the basis of their hypothesis, for the origin of matter. When it is suggested to them that any theory of origins should also account for the FIRST ORIGIN, the beginning of things, they direct us to philosophy: "Evolution is not concerned with the origin of matter; it takes matter for granted; the origin of matter is properly a philosophical and not a scientific problem."

Let us note the fallacies of this position. In the first place it is not proper to introduce the word "science" into this plea. Science is, indeed, only concerned with things that can be demonstrated by observation and from experience; and since no one has seen the beginning of matter, science is very properly not concerned with it. But evolution is not a science. It is a hypothesis, a theory. It is an explanation proposed for certain phenomena. And we have a right to demand that, if it wants recognition even as a theory, it must explain those phenomena. Now the principle of evolution is: All things have developed through certain forces which inhere in matter. In other words, without being acted upon from the outside, (without a creative word of God, for instance,) the unvierse has come to be what it is to-day. In matter there are from the beginning certain forces inseparable from matter. These acted in such a way that very simple plants and animals became very complex; and this without any directing Intelligence. This is the evolutionary theory. Now, we hold that a theory which claims to account for the beginning of all animal life (and every species of animal life), for the beginning of plant life(and of every species of plant life), for the beginning of life germs, of the globe, of the sun and stars, cannot stop short when we press our questions

still farther and ask: Whence is matter? Whence is force?

Nor, indeed, do evolutionists hesitate to express an opinion concerning the origin of matter and force. The universe, as it exists to-day, is made up of matter disposed in various forms,—stars, rock, plants, animals,—and endowed with energy in various forms; and from the earliest age of speculation, as we have seen, the human mind conceived of a time in which there was *unorganized* matter, substance without form. Like the ancient Greek philosophers, evolutionists to-day try to formulate a working hypothesis to account for the origin of the universe. It is believed that, in a broad way, the *Nebular Hypothesis* put forth by La Place indicated the manner in which the earth and the system to which it belongs have been evolved. We have outlined, briefly, in our first chapter, the main features of this theory. We shall now indicate the difficulties which stand in the way of its acceptance even as a working hypothesis.

1. The Nebular Hypothesis assumes that during a past endless time there has existed an incalculable number of original *atoms*. Let us understand that according to the so-called atomic theory, matter is composed of indivisible particles, called atoms. Since the discovery of radium this theory has been considerably modified, each atom now being understood to consist of many thousands of smaller particles, called electrons. However, whether we call them atoms or electrons, the smallest, indivisible particles of matter are assumed to have existed during infinite past time. Now, the origin of these simplest component parts of matter *remains an unsolved mystery.* The mind is unable even to formulate a guess with reference to their organization.

2. A second postulate of the Nebular Hypothesis is the *origin of force and motion* in the huge gas ball which

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existed in the beginning. La Place says that "at some point concentration took place in the homogeneous mass, this contraction produced radiation of heat and light, and through the differences in temperature, *motion* and dynamic reaction were produced." The difficulty which inheres in this postulate is the unquestioned fact that all motion in nature follows certain immutable *laws**, and *the origin of these laws* is not accounted for by the theory. Laws never make themselves, and their complexity,—immeasurably beyond our power of exploration—yet everywhere adjusted to a definite end, is so intricate that their origin can by no means be accounted for by chance.

3. According to the theory, matter was first in *"nebular" (gas) form,* and the gases which existed diffused through space were, through the motion which originated, changed from a huge ball of fire-mist to a semi-solid sphere, which threw off smaller spheres (the planets) that gradually became solid. Now, this is contrary to our knowledge of gases. Gases may be produced from solids, but an incandescent gas will not, through simple motion, become a solid substance. Gases may be solidified, but only in two ways, by pressure or when greatly cooled,—when they become ice. But they do not retain this form when the pressure or the cooling agency is removed. Gases, as we know them, all have a tendency to expand indefinitely. They have no tendency to solidify, as the hypothesis presumes.

4. La Place assumed that the solar system when still in gaseous state, began to revolve upon its axis, and that, as the gas ball continued to revolve, it condensed. As condensation went on, the rotation became faster, and a ring of matter was thrown off from the hardening core.

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* These laws, so far as known, form the basis of what we call physics and chemistry.

This ring again resolved itself into a rotating globe which, still in a fluid state, threw off other balls, which revolved around their mother, the first planet, even as the latter continued to follow an orbit around the central body, the sun. In this way the planets of the solar system, including the earth, (according to the theory), were evolved together with their satellites or moons. The difficulty attending this view of planetary evolution is found in the difference between *the movements of a number of satellites* around the planets. While the satellites of the earth, of Jupiter and of Saturn revolve *from west to east,* the moons of Uranus and Neptune have an orbital movement *from east to west.* This is regarded also by the friends of the Nebular Hypothesis as one of the gravest difficulties, since no mechanical law will explain the reverse movement of the satellites of the remotest planets when they, as well as Jupiter, Saturn, and the rest are supposed to have been cast off by the same central body.

5. According to the theory, the original atoms during the process of world-making united into *molecules.* The laws according to which atoms unite,—so that, for instance, the hydrogen atom each unites with two atoms of oxygen, and so down the list of all known existences,—these laws are among the assured results of scientific study. Now, the entire science of chemistry in all its branches is built upon the axiom that molecules are *absolutely unalterable,* and that molecules of the same kind are always absolutely identical. A molecule of water is always and invariably composed of two atoms of hydrogen and one of oxygen. A molecule of sulphuric acid invariably contains two atoms of hydrogen, one of sulphur, and four of oxygen. A molecule of potassium chlorate is always composed of just one atom of potassium, one atom of chlorine, and three atoms of oxygen, no

more, no less. Never is there any variation of the proportions in the same compound, and a chemist will, merely by mathematical calculation, unerringly produce new combinations, relying on the absolute constancy of the relations of atoms and molecules. Now, the theory that in the beginning of things, out of a mass of atoms diffused without form through space, molecules came into being, each kind or type composed of atoms according to a proportion peculiarly its own, cannot be accepted unless it is shown in what manner the laws came into existence according to which these combinations take place. Clerk Maxwell concludes a masterly statement of this aspect of the hypothesis by asking: "Who can restrain the ulterior question, Whence then these myriad types of the same letter imprinted on the earth, the sun, the stars, as if the very mould used here had been lent to Sirius, and passed on through the constellations? No theory of evolution can be formed to account for the similarity of the molecules throughout all time, and throughout the whole region of the stellar universe; for evolution necessarily implies continuous change, and the molecule (as known to science) is incapable of growth or decay, of generation or destruction."

The Origin of Life.

The origin of life on our globe is not accounted for on the basis of the evolutionary hypothesis. At some time in the remote past, there must, according to the theory, have been a development of living substance from a mineral base. But if scientific experiment has shown anything it has shown the unreality of what was called "spontaneous generation." This term was very popular with the scientists of a century or two ago. It was believed that certain animal and vegetable forms gave birth, in the process of decay, to insect life. Putrefying meat

gives rise to maggots. The origin of these grubs was referred to the power of "spontaneous generation." When the Italian naturalist Redi discovered that an exclusion of flies from meat was all that was necessary to prevent the production of grubs, the doctrine of spontaneous generation was thoroughly upset, for his time at least. But the microscope revealed in "pure" water the presence of thousands of small creatures, the infusoria. Again spontaneous generation was appealed to in order to explain their presence. But the famous experiments of Pasteur (related by Huxley in his lectures on The Origin of Species, Lecture III), proved conclusively that sterilized water will not produce living forms when the germs floating everywhere about in the air are excluded.. Since that time all men of science agree that there is no such thing demonstrable as spontaneous generation. It has become an axiom that "Life only comes from life." But how the first germs of life originated, is a question for which there is no answer. Huxley admits: "Of the causes which led to the origination of living matter it may be said that we know absolutely nothing." "The present state of knowledge furnishes us with no link between the living and the not living."

However, while spontaneous generation is "absolutely inconceivable" (Darwin), and while no experiments made on dead matter have ever produced living (plant and animal) matter, life must have originated at some time from non-life according to the evolutionary hypothesis. The theory assumes that at some time the globe was in an incandescent stage. At that time there could not have been any life on our earth. But as the earth cooled, it is held that by some chemico-electric action (electric force acting upon elements in favorable combinations). inert, lifeless matter became endowed with the property which we call life, and this original living substance is

called protoplasm. From it, by successive modifications, slow in their operation, the teeming variety of living things is believed to have developed. Now it is a notable fact, that many evolutionists (among them Alfred Russell Wallace, the co-discoverer of the theory which goes under Darwin's name) frankly admit the inability to account for the origin of protoplasm. From mineral substances, protoplasm differs in that it possesses the power of growth, development, and reproduction. The very first vegetable cell "must have possessed altogether new powers," says Mr. Wallace, "that of extracting carbon from the air and that of indefinite reproduction. Here,"—note this admission,—"we have indications of *a new power* at work." In other words, forces resident in matter no longer suffice. The evolutionistic principle breaks down.

Some fifty years ago it was thought that experimental proof had been found for the presence on earth of the original, simple, unorganized protoplasm; that the basis of all life on earth had been discovered,—in the depths of the ocean. The story of this "discovery" is entertainingly told by the Duke of Argyle in the *"Nineteenth Century"* magazine. We quote from his article.

"Along with the earlier specimens of deep sea deposits sent home by naturalists during the first soundings in connection with the Atlantic telegraph cable, there was very often a sort of enveloping slimy mucus in the containing bottles which arrested the attention and excited the curiosity of the specialists to whom they were consigned. It was structureless to all miscroscopic examination. But so is all the protoplasmic matter of which the lowest animals are found. Could it be a widely diffused medium of this protoplasmic material, not yet specialized or individualized into organic forms, nor itself yet in a condition to build up inorganic skeletons for a habitation? Here was a grand idea. It would be well to find missing

links; but it would be better to find the primordial substance out of which all living things had come. The ultra-Darwinian enthusiasts were enchanted. Haeckel clapped his hands and shouted *Eureka!* loudly. Even the cautious and discriminating mind of Professor Huxley was caught by this new and grand generalization of the 'physical basis of life;' It was announced by him to the British Association in 1868. Dr. Will Carpenter took up the chorus. He spoke of 'a living expanse of protoplasmic substance,' penetrating with its living substance the 'whole mass' of the oceanic mud. A fine new Greek name was devised for this mother slime, and it was christened 'Bathybius,' " (from two Greek words meaning "depth" and "life,"), "from the consecrated deeps in which it lay. The conception ran like wildfire through the popular literature of science. Expectant imagination soon played its part. Wonderful movements were soon seen in this mysterious slime. It became an 'irregular network,' and it could be seen gradually 'altering its form,' so that 'entangled granules' changed their relative positions."

Such was Bathybius, which once raised such a commotion in the world of science, but which is never heard of or even alluded to in scientific circles today. And now for the issue of this discovery of such mighty promise. In the year 1872, the "Challenger," commanded by John Murray, set out on a voyage of deep-sea exploration. "The naturalists of the 'Challenger' began their voyage in full Bathybian faith. But the sturdy mind of Mr. John Murray kept its balance—all the more easily since he never could himself find or see any trace of this protoplasm *when the dredges of the 'Challenger' came fresh from the ocean bottom.* Again and again he looked for it, but never could he discover it. It always hailed from England. The bottles sent there were reported to

yield it in abundance, but somehow it seemed to be hatched in them. The laboratory in London was its unfailing source. The ocean never yielded it until it had been bottled. At last, one day on board the 'Challenger,' an accident revealed the mystery. One of Mr. Murray's assistants poured a large quantity of spirits of wine into a bottle containing some pure sea-water, when lo! the wonderful protoplasm Bathybius appeared! It was *the chemical precipitate of sulphate of lime* produced by the mixture of alcohol and sea-water! Thereafter 'Bathybius' disappeared from science."

The term "protoplasm" has, indeed, been retained by writers on biology. The whole body of an animal, and the structure of plants, are understood to consist of cells. The cells consist of a colorless substance, and this is called "protoplasm." It is a substance of very complex chemical and physical make-up, in fact, no chemist has yet been able to analyze it and a famous biologist says that very probably it may never be analyzed (David Starr Jordan.) Protoplasm, like the white of egg, is the basic substance of life, yet in the variety of forms which it takes it is of *"almost unlimited complexity"* (Jordan). Now, a new difficulty develops when this complex character of protoplasm as it is now found in animals and plants is considered. Clear (unmodified) protoplasm, as found in white of egg and in the white cells of the blood, is the structureless substance called albumen. However, protoplasm varies almost infinitely in consistency, in shape, in structure, and in function. It is sometimes so fluid as to be capable of forming in drops, sometimes semi-fluid, sometimes almost solid. In shape the cells may be club shaped, globe shaped, threaded, flat, conical. Some protoplasm produces fat, others produce nerve substances, others brain substances, bone, muscle, etc., each producing only its own kind, uninterchangeable with the rest. Last-

ly, there is the overwhelming fact that there is an infinite difference of protoplasm in the infinitely different plants and animals, in each of which *its own protoplasm but produces its own kind.* "Here are several thousand pieces of protoplasm; analysis can detect no difference in them. They are to us, let us say, as they are to Mr. Huxley, identical in power, in form, and in substance; and yet on all these several thousand little bits of apparently indistinguishable matter an element of difference so pervading and so persistent has been impressed, that of them all, not one is interchangeable with another! Each seed feeds its own kind. The protoplasm of the gnat will no more grow into the fly than it will grow into an elephant. Protoplasm is protoplasm; yes, but man's protoplasm is man's protoplasm, and the mushroom's the mushroom's." (Dr. Sterling, *"As Regards Protoplasm."*) Hence we are compelled to acknowledge not an identity of protoplasm in all substances, but an infinite diversity. It follows that the derivation of all plant and animal forms from an original speck or germ of living matter is not only unproven, but is contradicted by biological science.

Darwin himself, like his co-laborer Wallace, was constrained to admit that the origin of life constitutes an unsolved problem. Matter and force do not account for it. Darwin accepted a divine fiat somewhere in the beginning. He says: "There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into the first forms or into one." In other words, the creation of the first living being was an exceptional kind of power. But if, as Mr. Darwin says, life was breathed by the Creator into the first forms, this constitutes a break in the sufficiency of natural causes alone to produce life. If a special fiat was necessary at this point, why may it not have been at others? If by divine omnipotence, life is believed to have been originated, why shall

we not believe that by divine omnipotence the various species of plants and animals were brought forth as related in the first chapter of the Bible? "If the Creator could breathe life into a few forms or into one, as Darwin thinks he did, without violating the law of his own being, and in accordance with the laws which he has established, it seems evident that he might at other times breathe life into other forms in accordance with his laws. I see no necessity for a logic that would compel the Creator to confine the number of his creative fiats to a few, or to one, nor which would limit the fiats to one time." (Fairhurst, *"Organic Evolution Considered."*)

Biological Barriers.

The atom, the molecule, the life-germ,—these are the barriers which stand against the evolutionistic conception of origins on the physical side. We proceed to investigate the points at which *biology* touches our problem, and again three barriers call for notice and investigation: The difference between plants and animals; the difference between vertebrates and invertebrates; and the difference between mammals and all other vertebrates.

1. *Whence the animal kingdom?* This stage in the scale of life, the advance from vegetable to the animal kingdom, is, to quote Mr. Wallace, again "completely beyond all possibility of explanation by *matter,* its laws and forces. It is the introduction of *sensation or consciousness,* constituting the fundamental distinction between the animal and vegetable kingdoms." Plants live, animals live *and feel;* and they have consciousness. At this point again, only a thorough-going materialist will deny the working of an outside power, a power not resident in matter, but altering and molding matter from without and endowing it with new abilities. Only an

act of this Power Without could endow living substance with feeling and consciousness. No one can here any longer appeal to that undefined chemico-electric action by which some attempt to account for protoplasm. Mr. Wallace says: "Here all idea of mere complication of structure producing the result is out of the question. We feel it to be altogether preposterous to assume that at a certain stage of complexity of atomic constitution, and as a necessary result of that complexity alone, an *ego* should start into existence,—a thing that *feels,* that is *conscious* of its own existence. Here we have the certainty that something new has arisen,—a being whose nascent consciousness has gone on increasing in power and definiteness till it has culminated in the higher animals. No verbal explanation or attempt at explanation —such as the statement that life is 'the result of the molecular forces of the protoplasm,' or that the whole existing organic universe from the amoeba up to man was latent in the fire-mist from which the solar system was developed—can afford any mental satisfaction, or help us in any way to a solution of the mystery."

2. *Whence the backbone?* All animals are divided into vertebrates and invertebrates, the animals with a backbone and animals without. Between these two groups the barrier of backbone stands impassable till it is explained how a butterfly could become a bird, or a snail a serpent, or a star fish acquire the skeleton of the shark. These two groups, the vertebrate animals and the invertebrate, must be regarded as fundamentally distinct.

3. *Whence the breast?* Vertebrates are either mammals or submammals. The breastless tribes are birds, reptiles, and fishes. These are far beneath in the scale, while the mammal, by its peculiar endowment in that it gives suck to its young, stands elect, aloft, and apart. Till it is shown how an animal that never got

milk from its mother stumbled on the capacity of giving what was never given it, *the breast* will stand, against all dreams of development, companion-barrier to the backbone. Nor is there an animal that can be regarded as a connecting link between these two master groups.

The "theistic" evolutionist, who believes that God at various times "helped out" the forces residing in matter, by creating something new, is inclined to say that at each of these points,—the origin of the first sentient animal, the origin of the first vertebrate, and of the first mammal, —God by his omnipotence caused a new type to originate. Aside from the fact that "forces resident in matter," the basic idea of the evolutionistic theory, here begins to become somewhat faint as a background even for a "theistic" conception of development, it is evident that we have already reached a point far down the scale of organic evolution in which the admission must be made that no possible working of forces within matter can account for the change. Again we say, if we already admit that the various great types of animal life could not originate without a special creative act of God, then why should we not accept the record of Genesis which says that the various species of plants and the various species of animals were created, each a separate species, in the beginning? Once admit special creative acts, and there is no longer any need for a hypothesis of evolution.

Man.

The difficulty which stands in the way of accepting, on purely scientific grounds, the descent of man from a brute ancestor, is, first of all a biological (physiological) difficulty. Among all the mammalia (to accept the classification of man with that group), man alone has a perfect brain. By this we mean the physiologically and structurally perfect brain. It is present even in the lowest man

—present in the negro or the Australian Bushman as in the civilized American; and absent in all living beings below man—absent in the ape or the elephant as truly as in the lowest mammals, the kangaroo or the duckbill. Its sign is *language,* capacity of *progress, culture.* All healthy human brains are structurally perfect; the highest brute brains are structurally imperfect. The least cultivated human being is susceptible of culture; a savage not only possesses the endowment of language but may be educated to appreciate the art of a Raphael or a Shakespeare. The brains of all other living beings are circumscribed by instinct, which never progresses. The perfect brain thus introduces another impassable biological barrier dividing the world of life.

However, the derivation of man from brute ancestry is attended by another and even greater difficulty. The brain, after all, is but an organ, it is the organ of *Mind.* Man possesses faculties of intellect (reason, imagination, the artistic faculties, etc.) and, above all, a moral nature, which raises him far above the brute. These faculties could not possibly have been developed by means of forces resident in matter or by means of the laws which are made to account for the physical universe.

The very term "evolution" implies the development of something that was at first involved, or essentially infolded, in that in which evolution began. In man there are attributes and faculties not shown by lower orders. Evolution, seeking to be consistent, answers: "It is true that faculties cannot be evolved out of a thing unless they exist in a crude and undeveloped state in that thing, but these higher faculties *do exist* in the lower orders, potentially, or in a germ form and are developed and become operative only in the higher forms of life."

Evolutionists do not shrink from this application of their theory to the human mind. The attributes of a

Shakespeare and the moral nature of a Paul were, essentially or potentially (capable of development), in the star fish and the jelly fish. The difference is not one of kind but of development and degree. Man has these faculties developed, the animals have them undeveloped. In the *"Life and Letters of Charles Darwin,"* published by his son, is a letter from Mr. Darwin to W. Graham, written in 1881, from which I quote the following: "I have no practice in abstract reasoning, and I may be all astray. Nevertheless, you have expressed my inward conviction, though far more vividly and clearly than I could have done. But then, with me, the horrid doubt always arises *whether the convictions of man's mind, which has been developed from the lower animals, are of any value, or are at all trustworthy."* Again he says (p. 528), in another letter written to Sir C. Lyell: "Grant a simple archetypal creature, like the mud-fish or lepidosiren (mud eel) with five senses and some vestige of mind, and I believe natural selection will account for the production of every vertebrate animal, including, of course, man."

Observe that this language is very definite. It says that the mind of man, with all its wonderful attributes and faculties, was evolved from the mind of the lower animals—and he goes as low as the mud-fish and the eel that live in the slime of the swamps. Now, whoever wishes to believe such a preposterous assumption can do so. He is able to believe almost anything, and to disbelieve everything. Mr. Darwin himself says he looks upon man's convictions as of no value, because they are the convictions of a mind derived from the mind of lower animals; nor can one blame him for being skeptical. Our point, however, is that there is such a tremendous difference between the intellectual and moral faculties

of man and the barely instinctive impulses of the lower creatures, that no one can see any connection between the two, unless there is some serious defect in his own mental or moral perceptions. Every instinct and conviction of the human mind rises in indignant repudiation of the theory of man's descent.

There are even among thoroughgoing Darwinians some who draw the line at this (necessary) application of the development idea. Wallace says, at the conclusion of his defense of Darwinism: "The faculties of man could not possibly have been developed by means of the same laws which have determined the progressive development of the world in general, and also of man's physical organism"—the human body. He finds in the origin of Mind clear indications of "an unseen universe—a world of spirit, to which the world of matter is altogether subordinate." (*"Darwinism,"* p. 320.) Yet the development of mind through merely physical forces is upheld to the present day by the majority of evolutionists. The doctrine is even found in public school texts. In Davis' *"Physical Geography,"* a high-school text, we read page 341:

"The greater intelligence of many land animals than of sea animals should also be regarded as a result of the development of land animals amid a greater variety of geographical conditions than is found in the seas. . . . The wonderful intelligence of man has been developed on the lands, because only on the lands is to be found the great variety of form, climate and products which can stimulate the development of high intelligence. It would have been as impossible for man to develop as an inhabitant of the dark and monotonous ocean floor as it has been for civilization to arise out of the frozen and lonesome lands of the Antarctic regions."

Thus even the children of our generation are taught a doctrine which is not only unproven but so far falls short of explaining that which it was invented to explain that it cannot, by any correct definition, even be dignified with the name of a "working hypothesis." It is a theory of origins which fails to account for one thing, precisely—Origins.

CHAPTER THREE.

The Testimony of the Rocks.

We have seen that the principal argument for a development of the higher types of life from lower organisms is based upon a study of fossil remains (paleontology). The older the strata in the earth's surface, the simpler the animal forms imbedded therein; the more recent the strata, the more complex and highly developed the fossil remains. Popular scientific works, and books of refence generally, quote it as an axiom: In the oldest rocks the simplest fossils are found, hence the higher animals are developed from the lower. Davis "Physical Geography" says (page 17):

"Age of the Earth.—It is impossible to say what the age of the earth and the solar system is, but it certainly should be reckoned in millions and millions of years. There is every reason to believe that the sun and the planets existed for an indefinitely long period before the condition of the earth's surface was such as to allow the habitation of the planet by plants and animals. It is well proved by the prints or fossils of various plants and animals in ancient rock layers that these lower forms of life existed upon the earth for a vast length of time, millions and millions of years before man appeared."

Here, then, we are squarely confronted by the issue. Either the rocks testify to a slow evolution of plant and animal life, or they supply no such testimony. Professor Downing of Chicago University, says that this

is indeed, the one primary argument for evolution, the rest being simply corroborative. On this *rock* evolutionists build their scientific Faith. Let us investigate.

We shall note, to begin with, that there are, indeed, a larger number of species, both of animals and plants, preserved in the rocks,—thousands, in fact. There are lowly organisms, of the crab and cuttle fish variety, and more highly organized forms, fishes and birds, and there are the prints and fossilized bones of great monsters, huge lizards and sloths and other mammalia. It is possible to establish a gradation in this great catalog of fossils, beginning with the largest or most perfectly developed, and ending with the animals lower in the scale of life; or vice versa. The evolutionists say, *vice versa,* the simplest first, the most complex last, and then they add: *So* they have developed.

At this point we shall first quote one of the earliest palaeontologists, and one of the most famous, Hugh Miller, whose *"Old Red Sandstone,"* first published in 1841, has now been republished in the *"Everyman Library."* In this brilliant work, Miller pays his respects to the evolutionists of his age. He refers to Lamarck and says: "The ingenious foreigner, on the strength of a few striking facts which prove that to a certain extent the instincts of species may be improved and heightened, and their forms changed from a lower to a higher degree of adaptation to their circumstances, has concluded that there is a natural progress from the inferior order of being towards the superior, and that the off-spring of creatures low in the scale in the present time may hold a much higher place in it, and belong to different and nobler species, a few thousand years hence. . . . He has argued on this principle of improvement and adaptation, —which, carry it as far as we rationally may, still leaves

the vegetable a vegetable, and the dog a dog,—that in the vast course of ages, inferior have risen into superior natures, and lower into higher races; that molluscs and zoophytes have passed into fish and reptiles, and fish and reptiles into birds and quadrupeds; that unformed gelatinous bodies, with an organisation scarcely traceable, have been metamorphosed into oaks and cedars; and that monkeys and apes have been transformed into human creatures, capable of understanding and admiring the theories of Lamarck.

"It is a law of nature," continues Mr. Miller, "that the chain of being, from the lowest to the highest form of life, should be, in some degree, a continuous chain; that the various classes of existence should shade into one another, so that it often proves a matter of no little difficulty to point out the exact line of demarcation where one class or family ends and another class or family begins. The naturalist passes from the vegetable to the animal tribes, scarcely aware, amid the perplexing forms of intermediate existence, at what point he quits the precincts of the one, to enter on those of the other. All the animal families have, in like manner, their connecting links; and it is chiefly out of these that writers such as Lamarck and Maillet construct their system. *They confound gradation with progress.* Geoffrey Hudson was a very short man, and Goliath of Gath a very tall one; and the gradations of the human stature lie between. But gradation is not progress; and though we find full-grown men of five feet, five feet six inches, and six feet and a half, the fact gives us no earnest whatever that the race is rising in stature, and that at some future period the average height of the human family will be somewhat between ten and eleven feet. And equally unsolid is the argument that from a principle of gradation in

races would reduce a principle of progress in races. The tall man of six feet need entertain quite as little hope of rising into eleven feet as the short man of five; nor has the fish that occasionally flies any better chance of passing into a bird than the fish that only swims. Geology abounds with creatures of the intermediate class. *But it furnishes no genealogical link to show that the existences of one race derive their lineage from the existences of another.* The scene shifts as we pass from formation to formation; we are introduced in each to a new dramatis personae. Of all the vertebrata, fishes rank lowest, and in geological history appear first. Now, fishes differ very much among themselves: some rank nearly as low as worms,—some nearly as high as reptiles; and if fish could have risen into reptiles, and reptiles into mammalia, we would necessarily expect to find lower orders of fish passing into higher, and taking precedence of the higher in their appearance in point of time. If such be not the case,—if fish made their first appearance, not in their least perfect, but in their most perfect state,—not in their nearest approximation to the worm, but in their nearest approximation to the reptile,—there is no room for progression, and the argument falls. Now, it is a geological fact, that *it is fish of the higher orders that appear first on the stage,* and that they are found to occupy exactly the same level during the vast period represented by five succeeding formations. There is no progression. If fish rose into reptiles, it must have been by sudden transformation. There is no getting rid of miracle in the case,—there is no alternative between creation and metamorphosis. The infidel substitutes progression for Deiety;—Geology robs him of his God."

Mr. Miller then relates his discovery of the winged fish (Pterichtys): "Of all the organisms of the Old Red

Sandstone, one of the most extraordinary, and the one in which Lamarck would have most delighted, is the Pterichtys, or winged fish. Had Lamarck been the discoverer, he would unquestionably have held that he had caught a fish almost in the act of wishing itself into a bird. Here are wings which lack only feathers, a body which seems to have been as well adapted for passing through the air as the water and a tail by which to steer. I fain wish I could communicate to the reader the feeling with which I contemplated my first-found specimen. It opened with a single blow of the hammer; and there on a ground of light-colored limestone, lay the effigy of a creature fashioned apparently out of jet, with a body covered with plates, two powerful-looking arms articulated at the shoulders, a head as entirely lost in the trunk as that of the ray or the sun-fish, and long angular tail." Miller says that he at first thought he had discovered a kind of turtle that partook of the characteristics of a fish. But he continues: "I had inferred somewhat too hurriedly, though perhaps naturally enough, that these wings or arms, with their strong sharp points and oar-like blades, had been at once paddles and spears, — instrument of motion and weapons of defence; and hence the mistake of connecting the creature with the Chelonia (turtles). I am informed by Agassiz, however, that they were weapons of defence only, which, like the spines of the river bull-head, were erected in moments of danger or alarm, and at other times lay close by the creature's side; and that the sole instrument of motion was in the tail. The river bull-head, when attacked by an enemy, or immediately as it feels the hook in its jaws, erects its two spines at nearly right angles with the plates of the head, as if to render itself as difficult of being swallowed as possible. The attitude is one of danger

and alarm; and it is a curious fact, that in this attitude nine-tenth of the Pterichthyes of the Lower Old Red Sandstone are to be found."

A century has passed since Miller thought he had discovered a turtle which was so modified in structure as to be a link between the turtles and the fish. But to the present day geology has failed to furnish evidence that such a link at one time existed.

This *absence, in the geological record, of transitional forms,* is one of the greatest difficulties of the evolutionistic theory. According to the theory, the fossils found in the various layers of rock ought to show gradual modifications, linking the various species of animals and plants in a finely graduated system, with thousands of forms showing in rudimentary structure those organs which in the more advanced forms have become fully developed. However, no such progress from more to less generalized types has been demonstrated, although many trained investigators have searched the fossiliferous rocks for such evidence of evolution. Professor Huxley in his *"Lay Sermons"* admits that an impartial survey of the positively ascertained truths of paleontology "Either shows us no evidence of such modification, or demonstrates such modification as has occurred to have been very slight; and as to the nature of that modification, it yields no evidence whatsoever that the earlier members of any long-continued group were more generalized in structure than the later ones." LeConte says: "Although the species change greatly, and perhaps many times, in passing from the lowest to the highest strata, we do not usually, it must be acknowledged, find the gradual transitions we would naturally expect, if the change were effected by gradual transitions." He further speaks of the absence of connecting links as "the greatest of all

objections" against the theory of evolution. (*"Evolution,"* p. 234.) This absence of transitional forms between different species has always been recognized as a serious difficulty; and Mr. Darwin, in the attempt to obviate it, succeeds only in showing how very serious it is. These are his words: "Geology assuredly does not reveal any such finely graduated organic chain; and this, perhaps, is the most obvious and gravest objection which can be urged against my theory."

Alfred Fairhurst says, in his *"Organic Evolution Considered"* (p. 93):

"According to the theory of evolution, and especially of natural selection, if we start with any organism and trace its history backward, we would find that through an endless number of generations it had been very slightly changing, so that any individual is always a transitional form between its immediate ancestors and its own offspring. This being true, one would expect, if the theory of evolution is true, to find vast numbers of transitional forms connecting earlier and later species in the various periods where fossils are well preserved. This, however, is not true. Species, when they first appear, stand sharply defined. Darwin expresses his disappointment at the absence of transitional forms as follows: 'But I do not pretend that I should ever have suspected how poor was the record in the best preserved geological sections, had not the absence of innumerable transitional links between the species which lived at the commencement and close of each formation pressed so hardly on my theory.'"

Even a cursory study of such texts as Dana's *"Manual of Geology"* will reveal that the development of the plants and animals through the "ages" of speculative geology does not move forward like a steadily rising flood. There is rather a series of great waves, each rising abruptly,

new forms often appearing suddenly and together. The very simplest known fossils, the trilobites, of which nearly a hundred species are known in America alone, and certain cephalopods (sea snails) are animals highly complex in structure and regarded by Le Conte as "hardly lower than the middle of the animal scale." The trilobites possess well developed compound eyes and the cephalopods have simple eyes, almost as complex as the eyes of man, possess a well defined stomach, a systemic heart, a liver, and a highly developed nervous system. Observe, that these two highly organized forms of animals, "hardly to be regarded as lower than the middle of the animal scale," are the very "oldest" animals found in fossil form! In other words, of at least one half of the total progress of the animal kingdom every vestige is lost. If we turn a few pages in Dana's *"Manual"* we find in the sandstone of the "Devonian Era" gigantic species of fish. The entire record of evolution from the mollusk to the fish is lost! There is not a single transitional form. These fishes have organs as complex and perfect as the fishes of to-day. Suddenly, in the "carbonic age" amphibia and reptiles appear, and then come, in the "Triassic" the huge reptiles known as dinosaurs. Insects and scorpions have been found in the "Silurian". They stand among the highest of even *living* articulates, and they are the "oldest" known airbreathing animals. "We seek in vain for the progenitors of these highly organized articulates or for some conceivable method by which their wings and special breathing apparatus could have evolved. We do not know that these first insects and scorpions have made any material progress through all the ages." (Fairhurst.)

Professor Huxley in delivering the anniversary address to the Geological Society for 1870, quotes the fol-

lowing from an address before the same society in 1862: "If we confine ourselves to positively ascertained facts, the total amount of change in the forms of animal and vegetable life since the existence of such forms is recorded, is small. When compared with the lapse of time since the first appearance of these forms, the amount of change is wonderfully small. Moreover, in each great group of the animal and vegetable kingdoms, there are certain forms which I termed Persistent Types, which have remained, with but very little apparent change, from their first appearance to the present time. In answer to the question, 'What then does an impartial survey of the positively ascertained truths of paleontology testify in relation to the common doctrines of progressive modification, which suppose that modification to have taken place by necessary progress from more to less embryonic forms, from more to less generalized types, within the limits of the period represented by the fossiliferous rocks?' I reply, It negatives these doctrines; for it either shows us no evidence of such modifications, or demonstrates such modification as has occurred to have been very slight. The significance of persistent types and of the small amount of change which has taken place even in those forms which can be shown to have been modified, becomes greater and greater in my eyes, the longer I occupy myself with the Biology of the past."

From the fact that the trilobites, so highly organized, appeared in the "primordial," or "oldest" strata, it would seem that they were specially adapted to make progress. They lived through "Paleozoic" time, which, according to Dana, represents twelve of the sixteen parts of all geological time, beginning with the Primordial; or, calling the whole geological time 48 millions of years, the trilobites lived 36 million of years, or three-

fourths of all geological time. From their great persistence in time (accepting, for the sake of argument, the "ages" of speculative geology) it would seem that they had a remarkably good opportunity to make wonderful progress in structure. During that time there were thousands of species, yet they made no progress. We do not know that in all those "millions of years" a single higher form was evolved from any one of the great multitude of species of trilobites. As Darwin says of the goose, so one may say of the trilobite; it "had a singularly inflexible organization." The remarkable thing about this, however, is that previous to the "Primordial," while it was *becoming* a trilobite, it must have had a singularly flexible organization, otherwise it could not have obtained its complex structure; but when it reached the "Primordial" it became very conservative.

Fairhurst says, in the work already quoted:

"It is a most remarkable fact that in the first geological period in which undoubted fossils occur, all the sub-kingdoms except that of the vertebrates are well represented, and that there is no evidence from fossils that one sub-kingdom, or even that different classes of the same sub-kingdom were evolved from each other. The great gulfs that separate the animal kingdom into sub-kingdoms and classes existed then, and have continued till the present time. . . . If we rely on known fossils as evidence, we would be obliged to conclude that highly organized fishes were suddenly introduced. The break in the supposed chain of evolution between the invertebrates and the highly organized vertebrates of the Lower Silurian is one of the greatest in the whole geological record. The vast gulf between these structures must, I think, remain unbridged except by the imagination."

The late Prof. Joseph LeConte, of the University of California, writes in his book, "Religion and Science:" "The evidence of geology to-day is that species seem to come in suddenly and in full perfection, remain substantially unchanged during the term of their existence, and pass away in full perfection. Other species take their places apparently by substitution, not by transmutation."

Dr. Robert Watts uses these emphatic words: "The record of the rocks know nothing of the evolution of a higher form from a lower form. Neither the paleozoic age nor the living organisms of our world reveal an authentic instance of such evolution. Both nature and revelation proclaim it as an inviolable law that like produces like."

And Hugh Miller went one step further when he testified: "I would ask such of the gentlemen whom I now address as have studied the subject most thoroughly, whether, at those grand lines of division between the Palaeozoic and Secondary, and again between the Secondary and Tertiary periods, at which the entire type of organic being alters, so that all on the one side of the gap belongs to one fashion, and all on the other to another and wholly different fashion,—whether they have not been as thoroughly impressed with the conviction that there existed a Creative Agent, to whom the sudden change was owing, as if they themselves had witnessed the miracle of creation?" (Presidential address before the Royal Physical Society of Edinburgh, 1852.)

But we have not yet done with this part of our investigation. The argument from geology is based on the assumption that the chronological order of the earth's layers *has been determined* at least with great approximation to certainty, so that we may say with some as-

surance that this layer of limestone or sandstone is of earlier, that, of later origin. As a matter of fact, the textbooks do treat the various "ages" of geology as if they corresponded to certain strata of the earth's crust. *But by what method is the age of the various layers determined?* James D. Dana in his "Manual of Geology" (Fourth edition, p. 398 f.) says that there are four methods by which we may decide the relation of one layer to another. The first is, naturally, the order in which the layers rest upon one another; the lower strata, are, of course, older than the upper. However, he points out in four "precautions" the inability of the investigator to depend on this method, since "for the comparing of rocks of disconnected regions, this criterion must fail." Also the color and mineral composition can be used only "with distrust" and must be "usually disregarded." Then the *Manual* proceeds: "4. *Fossils.*—The criterion for determining the chronological order of strata dependent on kinds of fossils takes direct hold upon time, and, therefore, *is the best;* and, moreover, it serves for the correlation of rocks all over the world." Now observe how, in the following, the geologist leans upon the evolutionist: *"The life of the globe has changed with the progress of time. Each epoch has had its peculiar species, or peculiar groups of species.* Moreover, the succession of life has followed a grand law of progress, involving under a single system a closer and closer approximation in the species, as time moved on, to those which now exist. It follows, therefore, that *identity of species of fossils proves approximate identity of age."* Let us bear this in mind. Dana *takes for granted* the evolutionary process. The simpler forms of animal life indicate the older strata, the complex forms, the more recent. We do not misunderstand Mr. Dana. Such ex-

pressions as the following abound: "Where direct paleontological observation has ascertained in particular cases the steps of progress in the development of organs, as, for example, those of the teeth in Mammals, the facts become a basis for further use in the same direction." (p. 402.) "The grander divisions of geological time should be based, in a comprehensive way, on organic progress" (from simple to more complex structures) (p. 404.) "When the relations of the beds to those recognized in other regions have been ascertained *through fossils* . . . (p. 405.)

The principle announced by Dana is accepted by geologists generally. Angelo Heilprin in *"The Earth and its Story,"* p. 153 ff. has the following: "There has been a steady and progressive advance in the general type of organization from the oldest to the newest periods; more highly developed or more complicated forms have successively replaced forms of simpler construction; and this advance is still continuing to-day. Once more, the correctness of the evolutionary hypothesis is taken for granted. In the oldest rocks, for example, no trace of backboned animals has yet been detected; when such do appear for the first time, they show themselves in their lowest types, the fishes; these are succeeded later by the amphibians(frogs, newts, salamanders), and these again by reptiles. And if we take the fishes by themselves, we find that they, too, begin with their lower, if not absolutely the lowest types, and progressively develop their higher ones. This history is repeated in the cases of the reptiles and quadrupeds—in fact, with every class of animals that is known to us. *Naturalists* (evolutionists) are to-day well agreed among themselves that all animal and vegetable forms are derivatives from forms that preceded them. . . . . Hence it is, that, in following

the geological record, we speak of progressive evolution, the evolving of higher or more complicated types of organisms from those simpler and more general in structure." Now read carefully the following: *"This fact* has permitted geologists to mark off distinct eras or periods in the life-history of the planet, each of them determined by certain characteristic animal or vegetable forms, which either do not appear before or after such period, or else are by numbers so distinctive of it as to typify it clearly." Evidently, the Philadelphia professor, too, *assumes* "progressive evolution" *as an ascertained fact* and in accordance therewith classifies the layers of the earth's surface. "Almost every species of fossil has a definite position in the geological scale, and would by itself serve to locate a formation; but oftentimes the determination of species, owing to insufficiency of knowledge of the obliteration of characters, is a most difficult task, and then recourse is had to the aspect of the entire group of fossils which a given rockmass contains. This generally *gives the age* or position without difficulty." Edward Clodd, in *"The Story of Creation, a Plain Account of Evolution,"* says, page 18. "The relative *age and place of each stratum . . . . are fixed by the fossils."*

Now, is not this a most extraordinary situation? The evolutionist says: The science of paleontology furnishes the basic argument for our hypothesis,—the older the strata of the earths surface, the simpler the fossils found therein. This sounds impressive. But we ask him: How do you know the age of the strata,—and the answer is, that, of course, is the business of the geologist to determine. We now turn to the geologist and ask: How do you determine the age of the strata? And the geologist answers: Why, evolutionary science has proven that the simplest animals and plants appeared first; hence.

where I find simple fossils, I know that I have a more ancient bed of lime-stone or sand-stone than the strata which contain more complex forms,—which appeared later. Note well, the geologists which we have quoted assert that this is the best and final proof for the position of a stratum in the scale of geological history. The geologist depends on the fossils. But he believes these to belong to an earlier or more recent age because he accepts *the evolutionist's* word for it. And the evolutionist says: the *geologist* says these rocks are oldest; but in them I find the simplest forms; hence the evolutionary theory is proven.

We repeat it,—is not this a very, very extraordinary situation? Have we not here a perfect case of what logicians call "reasoning in a circle," or "begging the question?" How can the evolutionist quote the geologist when the geologist asserts that he classifies his layers of rock according to the fossils,—and that he accepts what the evolutionists asserts regarding these?

What, in view of this situation, becomes of the evolutionist's argument from fossils? And what becomes of the "ages" of speculative geology?

CHAPTER FOUR.

The Fixity of Species.

A writer in the *"Lutheran Companion"* recently said that his seven year old boy brought home a text book some months ago, called *"Home Geography for Primary Grades."* On page 143 is found this statement about birds: "Ever so long ago, their grandfathers were not birds at all. Then they could not fly, for they had neither wings nor feathers. These grandfathers of our birds had four legs, a long tail and jaws with teeth. After a time feathers grew upon their bodies and their front legs become changed for flying. These were strange looking creatures. There are none living like them now."

One is tempted to digress, for a moment, from the subject at hand in order to draw, from this incident, an argument for the Christian Day School; but we shall desist. The quotation is here adduced to illustrate the vogue which evolution, specifically Darwinism, still maintains in the literature, even in the school-texts of our day. Babes and sucklings are introduced to the theory of evolutionary development, and the theory is presented with an assurance as if it were scientific truth. The words of Agassiz, prince of naturalists, apply to-day: "The manner in which the evolution theory in zoology is treated would lead those who are not special zoologists to suppose that observations have been made by which it can be inferred that there is in nature such a thing as change among organized beings actually taking place." He adds: "There is no such thing on record. It is

shifting the ground from one field of observation to another to make this statement, and when the assertions go so far as to exclude from the domain of science those who will not be dragged into this mire of mere assertion, then it is time to protest."

Dr. J. B. Warren, writing in a Presbyterian organ, more recently said: "If the theory of evolution be true, during the many thousands of years covered in whole or in part by present human knowledge, there would certainly be known at least a few instances, or at least one instance, of the evolution of one species from another. No such instance is known. Abstract arguments sound learned and appear imposing, so that many are deceived by them. But in this matter we remove the question from the abstract to the concrete. We are told that facts warrant the evolutionary theory. But do they? Where is one single fact?"

The hypothesis assumes that through environment, certain varieties of species (both of plants and animals) arose, and that the varieties best fitted, through their habits, structure, or color, to maintain themselves in the struggle for existence, survived the species less favorably endowed, and hence persisted. (We have quoted in our initial chapter the classical illustration of the dipper-birds from Wallace's *"Darwinism."*)

Now, as a matter of fact, we cannot prove that a single species has changed. These are the words of Darwin himself, quoted from *"Life and Letters,"* Vol. III, p. 25: "There are two or three million of species on earth, sufficient field, one might think, for observation. But it must be said to-day that in spite of all the efforts of trained observers, not one change of a species into another is on record." Dr. N. S. Shaler, Professor of Geology in Harvard, asserts that "it has not been

proved that a single species has been established solely or even mainly by the operation of Natural Selection." Professor Fleischmann, of Erlangen, has gone so far as to say that "the Darwinian theory of descent has, in the realms of nature, not a single fact to confirm it." Dr. Ethridge of the British Museum says: "In all this great museum there is not a particle of evidence of transmutation of species. Nine-tenths of the talk of evolutionists is sheer nonsense, not founded on observation and wholly unsupported by facts." Prof. Owen declares that "no instance of change of one species into another has ever been recorded by man." Dr. Martin, Sanitaetsrat, of Germany, who has conducted some highly technical experiments in the blood reactions of various animals and man, on which he bases his conclusions, says: "Since Darwin we have been accustomed to consider the concept 'species' as something insecure and unstable. The whole organic world must be thought of as fluid if the evolution theory is to find room for action. It required, indeed, all the great investigator's keenness to fence his theory against the difficulty which the lack of transitional forms occasioned, and against the fact that the rise of a new species has never been observed, much more against the fact that all processes in artificial breeding have not sufficed to fix permanently the changes which have been attained. We admire the clever structure of the theory, but there is no doubt that the obstinacy with which the organism clings to its species-characteristics is the point on which it is mortal. One is, in fact, as much justified in speaking of a struggle to retain these characteristics as to speak of a struggle for existence."

Man has been able greatly to modify many vegetable productions. Witness the comparatively recent changes

in the potato plant. The small, almost worthless tubers of the wild potato have changed, under the force of intelligent cultivation, to the large, starchy, nutritious vegetables, which furnish so many people a large portion of their food. Mind has been at work; mind and nature have changed the size, the quality, the productiveness of the *solanum tuberosum;* but neither mind nor nature, nor both combined, have, so far as we know, ever in the slightest degree changed the species. Potatoes are potatoes still, and always will be. The present law of vegetation is that intelligent cultivation of almost any plant will either change the original in one way or another, or, what is more likely, will produce several distinct varieties; but that all these changed forms are but mere modifications of the original species, and that, when deprived of intelligent cultivation, they all tend to revert to the original form. It is true that we see many and very diverse varieties of certain species, especially those that have received the most attention from the hands of man. The dog, for instance, exists as the great, shaggy Newfoundland or St. Bernard, or as the tight girted greyhound, as the petted poodle or the despised "yellow dog;" but in every case he is a dog, and not a wolf, and his fellow dogs recognize him as such, too. Hens differ amazingly; new breeds periodically come into existence and into fashion; but turn them loose, and they will all seek the barnyard, and soon your fancy breeds will become corrupt. They "revert to type." By the exercise of intelligent selection and training, man is able to emphasize certain points and to produce new breeds, but not to change the essential structure nor to alter the specific characteristics. The species are *fixed*. Huxley says:

"If you breed from the male and female of the same race, you of course have offspring of the like kind, and

if you make the offspring breed together, you obtain the same result, and if you breed from these again, you will still have the same kind of offspring; there is no check. But if you take members of two distinct species, however similar they may be to each other, and make them breed together, *you will find a check.* If you cross two such species with each other, then—although you may get offspring in the case of the first cross, yet, if you attempt to breed from the products of that crossing, which are what are called hybrids—that is, if you couple a male and a female hybrid—then the result is that in ninety-nine cases out of a hundred you will get no offspring at all; there will be no result whatsoever.

"The reason of this is quite obvious in some cases; the female hybrids, although possessing all the external appearances and characteristics of perfect animals, are physiologically imperfect and deficient in the structural parts of the reproductive elements necessary to generation. It is said to be invariably the case with the male mule, the cross between the ass and the mare; and hence it is that although crossing the horse with the ass is easy enough, and is constantly done as far as I am aware, if you take two mules, a male and a female, and endeavor to breed from them, you get no offspring whatever; no generation will take place. This is what is called the sterility of the hybrids between two distinct species." (Huxley, *"On the Origin of Species."* p. 212.) He continues:

"Thus you see that there is a great difference between 'mongrels,' which are crosses between distinct races, and 'hybrids,' which are crosses between distinct species. The mongrels are, so far as we know, fertile with one another. But between species, in many cases, you cannot succeed in obtaining even the first cross; at

any rate it is quite certain that the hybrids are often absolutely infertile one with another.

"Here is a feature, then, great or small as it may be, which distinguishes natural species of animals. Can we find any approximation to this in the different races known to be produced by selective breeding from a common stock? Up to the present time the answer to that question is absolutely a negative one. As far as we know at present, there is nothing approximating to this check. In crossing the breeds, between the fantail and the pouter, the carrier and the tumbler, or any other variety or race you may name—so far as we know at present—there is no difficulty in breeding together the mongrels." However, he continues, as soon as you remove the conditions which produced the new variety,—as when you permit pigeons to mate promiscuously,—no matter how different the varieties may have been, you will have, in a few generations of pigeons, the same blue rock pigeon with the black bars across the wings. No new species has originated. All varieties, in a free state, revert to type. "This," says Huxley, "is certainly a very remarkable circumstance."

Fairhurst points out the difficulties in which the evolutionist becomes involved through the fixity of species. He writes: "It is well known that as a rule distinct species will not cross, and that if they do cross the offspring are not fertile. On the other hand, it is true that all *varieties* of a species readily cross, producing fertile offspring. This has commonly been regarded as a well-defined distinction between varieties and species. If the varieties of pigeons which are so different from each other did not freely cross, and if the mongrel offspring were not fertile, Darwin's argument as to the production of new *species* under domestication would be complete. The fact is, we do not know of the origin of

any two species of animals that do not cross and whose offspring are not fertile; in other words, we do not know of the origin of *species,* but only of *varieties.* The origin of species that will not cross and produce fertile offspring is *assumed* from the origin of varieties that do cross and produce fertile offspring. This leaves the evolutionists to account for one of the most difficult things in connection with this theory, namely, how did varieties of animals of the same species become cross-sterile? * Several things must occur simultaneously before cross-sterility between parent and offspring could occur and become effective, namely, a number of individuals must be born at the same time possessing the same variation, the variation must be useful, these individuals must be fertile with each other, they must be cross-sterile with the parent form," as, otherwise, the offspring would revert to type, "and, finally, the few, if any, individuals thus produced and being widely scattered through the species, must find each other before they could propagate. I regard it impossible that these things could all occur simultaneously." (*"Organic Evolution,"* p. 333.)

Mr. Huxley is forced to this admission: "After much consideration, and with assuredly no bias against Mr. Darwin's views, it is our clear conviction that, as the evidence stands, it is not absolutely proven that a group of animals, having all the characters exhibited by species in nature, has ever been originated by selection, whether artificial or natural." And again. "Our acceptance of the Darwinian hypothesis must be provisional so long as one link in the chain of evidence is wanting; and so long as all the animals and plants certainly produced by selective breeding from a common stock are fertile with one another, that link will be wanting."

* So that they were unable to interbreed. Only if such cross-sterility exists, could they exist thereafter as independent new species.—G.

In a recent book, *"Creation or Evolution? A Philosophical Inquiry,"* George Ticknor Curtis says: "The whole doctrine of the development of distinct species out of other species makes demands upon our credulity which are irreconcilable with the principles of belief by which we regulate, or ought to regulate, our acceptance of any new matter of belief."

CHAPTER FIVE.

Rudimentary Organs.

Darwinism does not account for the fact that the various organs of animals while in process of evolution, must have through many generations, been in a rudimentary, incomplete state. Since it is a basic doctrine of evolution that useful variations were transmitted from parent to offspring *because they were useful*; and since furthermore, only the fully developed eye, the hearing ear, the actively functioning poison glands of insects and reptiles, etc., as well as the fully developed means of defense, were useful, it is not possible to understand how these organs in their rudimentary state (the half developed eye, not yet capable of vision; the rudimentary spinneret of the spider, not yet capable of producing a thread, etc.) could serve any purpose which would make their transmission advantageous to the species.

Conversely, the existence of rudimentary organs in living species (the rudimentary spurs of female birds, the rudimentary legs of skeleton of serpents) proves that organs do not change by use or disuse, otherwise they would long ago have disappeared.

With regard to this difficulty, Darwin says: "If it could be demonstrated that any complex organ existed which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely break down. But I can find no such case." Let us see.

A difficult organ to account for is the electric organ of the skates. In these fishes it has been shown to be a

true electric battery, but the discharges from this battery, even in the adults, are so feeble that they are of no practical use so far as has been ascertained. It is well known that the electric eel and the torpedo use their batteries for stunning other animals. It is evident that, according to the theory of natural selection, these batteries could not have been preserved through their long functionless and useless stages, for that theory assumes that they were preserved because they were useful.

It is asserted by evolutionists that wings as organs of flight have been independently evolved in at least four different lines—namely, in insects, the fossil pterodactyls, birds and bats. That an organ so highly specialized as any one of these wings could be evolved seems improbable; while the evolution of the four different kinds, independently of each other, only increases the improbability. The difficulty, however, is to account for the evolution of any known kind of wing. In each case there exists the insuperable difficulty of preserving the organ through the rudimentary stages. The wings of an insect in the first generation of its evolution would be almost imperceptible and entirely useless for any purpose whatever, and so it would continue to be for a great number of generations. It is evident, therefore, that they could not have been preserved through their long rudimentary stage on the ground that they were useful, nor do we know of any theory that will account for their evolution. To say that they were evolved is easy, but to account for their evolution seems impossible. Fairhurst refers to the delicate and complex organs of spiders. "The organs which spiders possess for secreting material and for making a web could not have been gradually evolved. The whole apparatus involved in making the web would be useless until sufficiently developed to make a web. The same is true," he continues, "of the sting

of the scorpion, the stings of bees, the mandibles of spiders with the gland of poisonous fluid at the base, and the poison apparatus of serpents. All of these glands for secreting poison would be useless until they could secrete a harmful fluid. The spurs of birds present further difficulties to the theory of evolution. Most birds have no spurs. When they possess them, as a rule the males alone have them well-developed, while they are rudimentary in the females. In some cases, however, both sexes possess them in a well-developed form. But how could a spur be evolved in either sex? As a rudiment, it would for many generations be entirely useless for any purpose, and consequently it would not be preserved by natural selection, nor in any other possible way, so far as I can see. The spurs are in the best possible position on the legs for combat. Why did they appear in the best place and nowhere else? As useless rudiments they would be quite as likely to survive in one place as in another. If spurs could not have been preserved by natural selection through their rudimentary stage, why assume that they have been evolved according to this law? If they could survive through the critical rudimentary period till they became of use, why not assume that their evolution was continued according to the same law? The fact is, however, that we know of no law according to which they could have been evolved."

The bat is another highly specialized animal. In many respects it resembles the mole, but its hands are enormously expanded, and the exceedingly long fingers are connected by a soft membrane, making a most serviceable wing. Is it not extremely likely, assuming the development theory to be true, that both the mole and the bat sprang from a common ancestor? And was not that ancestor probably a wingless, though not a legless mammal? Now, how came the bat to acquire his wings?

Did he attempt to spring into the air and seize a passing insect, and reach out his paws to catch it? And did those paws gradually become enlarged, till, after some generations, they were real wings? But what happened in the meantime to those connecting links whose wings were but partly developed? A bat with wings only half grown would be a helpless creature, and would surely perish. A mole with hands terminating in long, slender fingers, would be helpless, and would perish. There is no middle ground. If the ancestor of the bat was a terrestrial creature, with limbs fitted for walking, then it must have given birth to a full-fledged bat, fitted for flying. There could have been no middle stage, for such a creature would have been helpless, and must have perished.

All this applies with equal force to the diversified and often highly complex structure of plants. As the organs of the various plants are now constituted, they most admirably serve their purpose. Given a slight change, an underdevelopment, and the individual would perish. But such underdeveloped stages must have occurred in the history of every life-form on earth, if a change through slow adaptations is to be accepted as a hypothesis to account for their present form. To our mind, this matter of rudimentary structures presents an insuperable obstacle to acceptance of the evolutionary hypothesis even on scientific grounds.

CHAPTER SIX.

Instinct.

How the various instincts of animals, the homing instinct of birds and insects, the building instincts, the migrating instinct, etc., could have been developed though forces working by natural selection or any other law, is a question which has called forth much discussion. It cannot be said that the explanations contained in the pages of Darwin, Romanes, and Spencer are satisfying. The difficulty that remains unsolved is similar to that (already considered) of rudimentary structures. On instinct depends the existence of most animals. According to the theory these instincts have been developed by slow degrees. Hence there must have been a time when these instincts, because not yet completely developed, were useless to the animal. But if useless, the animal must have perished. The strength of this objection to the evolutionary hypothesis will become clear from a brief study of the manner in which animal life is bound up with the proper functioning of instinct.

Consider, for instance, the dependence of the honey bee and her hive on the functions, every one instinctive, of queen, workers, and drones. There is the queen, whose sole work is to lay eggs; the drones, or males, whose function it is to fertilize the queen; and the workers, which are females undeveloped sexually. In these three kinds of individuals we see a combination of many most remarkable instincts and peculiarities of structure which look to the good of the community.

How could they have been produced by evolution? The workers are sterile and leave no offspring, consequently their instincts cannot be inherited from bees of their own class. Each generation of workers is isolated from all succeeding generations. A colony of bees is not like a community of civilized human beings in whom many of the wants are artificial, and which may remain unsupplied, with simply a certain amount of discomfort, but the wants which the instincts of bees supply are imperative, and, therefore, the instincts themselves, as a whole, are necessary to the existence of the bees. Their instincts are all linked together as a necessary chain, so that if one should fail the community would perish, Each kind of work is perfectly done, and yet the workers are totally unconscious as to what will be the result of their labors. For the most part they work for future generations of their colony, and not for themselves, and yet they are as careful and diligent as if they were guided by the highest intelligence and the most selfish motives. Fairhurst, whom we are quoting, adds: "There is nothing more wonderful and mysterious in nature than the instincts of bees. What can be more remarkable than that instinct of the workers which causes them to prevent the queen from stinging to death the young queens in their cells? Here we see the instinct of the workers opposing that of the queen, and thus saving the colony and insuring the propagation of the species. And yet at other but proper times the workers permit the old queen to kill the young ones in their cells. How could these instincts in the workers, which act in exactly opposite ways by just the right times for the welfare of the community, have ever been evolved? Or how could that instinct have arisen which causes two queens when engaged in combat to refrain from inflicting the mortal sting if they would mutually destroy each other, and thus leave the

hive without a queen?—acting as if they knew that the life of one of them was necessary for the welfare of the community."

Concerning the modifications of structure and the instincts necessary to produce the web of the spider, Fairhurst quotes the following from Orton's *"Zoology."* "Spiders are provided at the posterior end with two or three pairs of appendages called spinnerets, which are homologous (correspond structually) with legs. The office of the spinnerets is to reel out the silk from the silk-glands, the tip being perforated by a myriad of little tubes through which the silk escapes in excessively fine threads. An ordinary thread, just visible to the naked eye, is the union of a thousand or more of these delicate streams of silk. These primary threads are drawn out and united by the hind legs." From this we see that two special glands, capable of secreting a soft material that can be readily drawn into the finest threads of the greatest strength, requiring no perceptible time for drying, and two to four spinnerets perforated by more than a thousand of the smallest apertures, and hind legs modified so that they can be used to draw out the web through the spinnerets, and also the instincts which enable the spider to use its web to advantage, must all have been evolved. To evolve the silk glands would have required, as for most other organs, a long period of incipiency, during which they would have been useless. We can not assume that a substance so exceptional in its character as the web of the spider could have been suddenly produced by evolution. But the glands would be useless without spinnerets. The hypothesis asks us to assume that two or three pairs of legs that were probably at one time useful for locomotion became so modified that they could perform the function of spinnerets. But in what conceivable way could locomotive legs have become so

modified and pierced with more than a thousand apertures through which the web is drawn? And how could these organs serve their purpose while the complex instincts required for their functioning were only in course of development?

From a German monthly devoted to aquaria, we quote the following: "But now, dear readers, we come to a fish which shows an exceptionally peculiar and touching care for its young—the mouth-brooder, *Haplochromis Strigigena* (formerly *Paratilapia Multicolor*). This fish is so much concerned about the safety of its young, that it knows no better and no more secure place than its own mouth in which to preserve them. In no other division of the animal kingdom can we find such an interesting example of fostering care for the young as we find in this species of fish. Immediately after emitting the spawn the female again gathers up the eggs and packs them away in her mouth like herring in a barrel. She naturally must employ the organs of the throat and also the organs between the gills and thus the appearance of the animal is greatly changed even to the extent that it looks very much like as if she had a craw. Furthermore, during this entire period, which is about fourteen days, the little animal cannot take food and is hampered very much in her movements. Therefore in case of imminent danger it becomes necessary for her to cast out the entire brood which then wretchedly perish, and for this reason it is to be recommended to disturb or disquiet these animals during this period as little as possible. Even after the young leave the mother of their own accord, they always flee to her protecting mouth, and thus they present an exciting aspect, when they are first seen peacefully and contentedly playing about the mother fish, until a shadow or a sudden thrust warns them of danger and quick as lightning they dart into her mouth.

"If the fostering care of this mouth-brooding fish is regarded as wonderful and singular, what should one then say, if another fish is spoken of which does not regard this kind of protection as sufficient, and which therefore causes its eggs to hatch outside the surface of the water. The exceedingly adorned and elegant *Phyrrhylina Filamentosa* performs this masterpiece of truest love. With great dexerity this fish darts from 5 to 7 cm. above the surface of the water and there fastens its eggs on the walls of the aquarium—usually in one corner. Even though one must and can preserve damp air by covering the aquarium, the spawn would never theless surely dry up, if the fish itself were not constantly concerned to keep the spawn damp by an extended bombardment of little drops of water. In the performance of this act the fish remains near the surface of the water and then by a quick upward movement of the fins of the tail it throws a drop of water upon the spawn in such an expert manner as is truly admirable. One must also keep in mind here that the spawn require from three to five days for hatching, and now one can understand what a huge task this little fish performs and what efforts are required. Later on the young hatch and then slide down the slick wall of the aquarium into their native element." (V. Schloemp in *"Blaetter fuer Aquarien und Terrarienkunde,"* Stuttgart, Sept. 1913.)

In all the domain of natural science there are no wonders more amazing than those of instinct. The subject is simply inexhaustible. Moreover, every animal is absolutely dependent on instinctively performed actions and habits. The life-story of many wasps, of the various ants,—someone has called the brain of the ant the most wonderful speck of protoplasm in the world,—and of the insects generally, is bound up with instincts that partly interlock marvellously with the life-story of plants, and

which are, even viewed in themselves, the greatest wonders of creation. The questions insistently call for an answer: How could these instincts preserve the animal when they were still in an incipient, undeveloped state? How could they arise through natural selection (which is simply *accident,* of course), at all? Darwin says that there are instincts "almost identically the same in animals so remote in the scale of Nature, that we cannot account for their similarity by inheritance from a common progenitor, and consequently must believe that they were independently acquired through natural selection." Again he says "Many instincts are so wonderful that their development will probably appear to the reader a difficulty sufficient to overcome my whole theory."

And here, in the vernacular of the day, we would depose that Mr. Darwin *"said something."*

CHAPTER SEVEN.

Heredity.

The subject of heredity is intimately bound up with the evolutionary hypothesis and, it must be admitted, creates a new difficulty for the acceptance of the theory. Indeed, the laws of heredity, so far as understood, appear to contradict the theory of Lamarck and Darwin at a vital point, if not at *the* vital point of the entire structure raised in the *"Origin of Species."* It is necessary in order to appreciate the strength of this objection, to recall once more the outstanding features of the hypothesis by which scientists have attempted to account for the variety of living forms. The various theories of organic evolution, whether Lamarckian, neo-Lamarckian, or Darwinian, are based upon the assumption that animals and plants have a tendency to perpetuate by transmission to offspring a variation which has proven useful as an aid to the particular species in its struggle for existence. We have just discussed, in the chapters on the Fixity of Species and on Rudimentary Organs, certain difficulties which loom up when the question is raised, How did varieties become distinct species? However, even if it were to be assumed that some satisfying answer might be found to this question so far as the stages of incomplete organs are concerned, there is one fact in heredity which, it would seem to me, strikes at the very heart of the theory.

In his *"Philosophic Zoologique"* (1809), Lamarck first explicitly formulated his ideas as to the transmutation

of species, though he had outlined them as early as 1801. The changes in the species have been wrought, he said, through the unceasing efforts of each organism to meet the needs imposed upon it by its environment. Constant striving means the constant use of certain organs, and such use leads to the development of those organs. Thus a bird running by the sea-shore is constantly tempted to wade deeper and deeper in pursuit of food; its incessant efforts tend to develop its legs, in accordance with the observed principle that the use of any organ tends to strengthen and develop it. But such slightly increased development of the legs *is transmitted to the offspring* of the bird, which in turn develops its already improved legs by its individual efforts, and transmits the improved tendency. Generation after generation this is repeated, until the sum of the infinitesimal variations, all in the same direction, results in the production of the long-legged wading-bird. In a similar way, through individual effort and *transmitted tendency,* all the diversified organs of all creatures have been developed—the fin of the fish, the wings of the bird, the hand of man; nay, more, the fish itself, the bird, the man, even.

Note well, the fundamental assumption is that such acquired characteristics,—greater length of leg, or of neck, a coating of hair, a protective coloring, etc.,—however acquired, can be transmitted from the parent animal possessing them, to its offspring. The question arises: Can such characteristics be transmitted? And the students of heredity answer: They *cannot!*

I find in G. Archibald Reid *"Alcoholism, a Study in Heredity,"* a lucid exposition of this subject. (Reid is a F. R. S. E. His book was published by T. Fisher Unwin, London, a few years ago.)

"All the characters of a living being, every physical structure and every mental trait, may be placed in one of

two categories. Either they are inborn or they are acquired. An inborn or innate character is one which, in common parlance, arises in the individual 'by nature.' Thus arms, legs, eyes, ears, head, etc., are all inborn characters. The child inherits them from his parent. But, if during its development, or after the completion of the development any one of the inborn characters of an individual is modified by some occurrence, the change thus produced is known as an acquired character, or, shortly, as an acquirement.

"Thus all the effects of exercise are acquirements; for example the enlargement which exercise causes in muscles. The effects of lack of exercise are also acquirements; for example, the wasting of a disused muscle.

"The effects of injury are acquirements; for example, the changes in a diseased lung or injured arm. Every modification of the mind is also an acquirement; for example, everything stored within the memory.

"If a man be blinded by accident or disease, his blindness is acquired. But if he comes into the world blind, if he be blind by nature, his blindness is inborn. If a son be naturally smaller than his father, then his inferiority of size is inborn; but if his growth be stunted by ill health or lack of nourishment or exercise, his inferiority is acquired.

"Lamarck held, as people in all ages have held, that characters acquired by parents are also transmissible to some extent, and that evolution results from their accentuation during succeeding generations. *Lamarck's theory is rejected totally by the modern followers of Darwin.*

"Ten thousand men might break their fingers, yet among their offspring not one might have a crooked finger. Consider on the other hand for how many gen-

erations women have bored their ears and noses in India. Yet when is a girl born with ears and nose already pierced? For how many generations have we amputated the tails of terriers, and yet their tails are no shorter. It will then be perceived how overwhelming is the case against the doctrine of the transmission of acquirements.

"The general question of the transmission of acquirements is too big and too abstruse to be treated adequately here. Two arguments more I may use, however, partly because they have not been developed, to my knowledge, by other writers, and partly because they seem to me well-nigh decisive. The more than normal development of the blacksmith's arm is rightfully called an acquired trait, since it arises from exercise, from use, not from germinal conditions. But no infant's arm develops into an ordinary adult arm without exercise similar in kind to that which develops the blacksmith's arm, though less in degree.

"Every single thing contained within the memory of man, every single word of a language, for instance, is an acquirement. But when are the contents of a parent's mind transmitted to the child?

"Again, a man is capable of becoming a parent at any time between extreme youth and extreme old age; a woman from the age of thirteen to fourteen till nearly fifty. Between the birth of the first child and the last such an individual changes vastly. Under stress and fear of circumstances, under the slings and arrows of outrageous fortune, all sorts of acquirements are made. The body becomes vigorous and then feeble, the mind grows mature, and then senile. He or she grows wrinkled and bowed and perhaps very wise, or perhaps much the reverse. Yet no one viewing a baby show, a children's party, or an assembly of adults, of whom he

has no previous knowledge, can say which is the child of the youthful and which of aged parents.

"Apparently, therefore, the whole of the parent's acquirements have no effect on the child. *Surely no evidence could be stronger.*" *

Herbert Spencer claims that "the inheritance of acquired characters" is a necessary supplement to natural selection. "Close contemplation of the facts impresses me more strongly than ever with the two alternatives—either there has been inheritance of acquired characters, or there has been no evolution." Again, "the inheritance of acquired characters, which it is now the fashion of the biological world to deny, was by Mr. Darwin fully recognized and often insisted on." "The neo-Darwinists, however, do not admit this cause at all." He admits that known facts which show that acquired characters are inherited are few, but he thinks that they are "as large a number as can be expected, considering the difficulty of observing them and the absence of search." From the above, we see that the biological world is against Mr. Spencer's view; that he would abandon the theory of evolution unless acquired characters had been inherited, but that facts in support of this theory are meager. "Biologists in the above instance, as well as in others, differ in theory as to fundamental principles of evolution. He who imagines that the theory of organic evolution has been proved to the point of demonstration, has but to read the contentions of evolutionists themselves

* The undoubted transmission of siphilis to off-spring might be regarded as a case of transmission of an acquired characteristic. But the case is not in point since congenital siphilis is, properly, due to a prenatal infection, the bacillus entering the very germ-plasm of the human ovum (egg). Medical science, generally, has become very cautious in the use of the word "hereditary." There is almost unanimity among medical men in the denial of heredity as a factor in tuberculosis and cancer. Most physicians are honest enough to say that they know considerably less about these things than was "known" ten and twenty years ago.

with regard to the most important things involved in the theory, in order to satisfy his mind that there is great diversity of opinion." (Fairhurst.)

The general abandonment of the Darwinian hypothesis by biologists, adverted to in our next chapter, is mainly due to the failure of heredity to account for the gradual modification of organs and of habits.

Various expedients are resorted to by Haeckel and a few others in their attempts to bolster up a theory which has broken so signally on the rock of heredity. Principal among these is the reference to unlimited time. It is asserted that, after all, such minute differences might, in the course of many ages, result in new and more perfect organs. However, here a new and unexpected difficulty presents itself. The physicist, who has measured the heat of the sun, rises up and says that the age of the earth, as estimated by specialists like Lord Kelvin, is not nearly so great as is demanded by the Darwinian. The period which the physicists, in their mercy, appear to be willing to grant the inhabitable globe is from twenty to forty million years. But the evolutionists maintain with great fervor that this period is far too short for the production of such complicated types of organism as now live on the earth; they demand from two hundred to a thousand million years! And so these two groups of scientists, the evolutionistic biologist and the physicists are hopelessly at odds.

A new generation of evolutionists has within the past twenty years arisen which holds that the changes in the organizations of plants and animals do not come by slow growth of favorable characteristics, but arise suddenly. Such is the "Mutation" theory of Hugo de Vries. But science has failed to receive this and similar theories with the same acclaim which once greeted Darwin's *"Origin of Species."* Naturalists have become cautious. They re-

member the inglorious collapse of the Darwinian regime and they are slow to hail another "Abraham of scientific thought." They are, in a general way, believers in some kind of evolution; but they prefer not to specify exactly the laws which have been operative in past "geological time." It is only in high-school texts in physical geography, zoology, and botany, that the evolutionary theory as propounded by Darwin is still treated as if it enjoyed among scientific men the same respect as the multiplication table. Speaking in the Darwinian dialect we should say that the authors of these school-texts constitute a case of "arrested development."

CHAPTER EIGHT.

A Scientific Creed Outworn.

The preceding chapter concludes our investigation of that stage of evolutionistic thought which owes its origin and name to Charles Darwin. The question suggests itself, do scientists to-day believe as Darwin did? A great many do. Darwin remains to many scientists what Huxley, I think, called him, the "Abraham of scientific thought." But if we examine the roster of these, we find that they belong, with a single exception (Haeckel), to those whose departments of investigation have nothing to do with the study of life forms (biology, zoology, botany), and who consequently do not speak from first hand knowledge of the facts. Anthropologists (students of the races of man), sociologists, psychologists, and many educated persons generally, accept the Darwinian scheme of evolution as a fact and build their theories on it in turn. They accept the theory and ask no question. The vogue which Darwinism still enjoys among writers of school-texts has already been noted.

However, the specifically Darwinian phase of evolutionistic thought, as laid down in Spencer's interminable volumes, for instance, is given up by reputable biologists the world over. There is pretty much of a Babel among them, when it comes to a definition of evolution. There are dozens of theories,—mutation, orthogenesis, Weismanism, Mendelianism, etc.,—and each has its adherents, —but they agree in one thing, that "Natural Selection" does not account for the forms of life on earth to-day.

The revolt against "Natural Selection" came some forty years ago. It was announced in two famous declarations by Spencer and Huxley. This constitutes one of the most remarkable and important, as well as one of the most significant episodes, in the history of evolution In two of the most remarkable essays which ever appeared in the *"Nineteenth Century"* magazine, now over thirty years ago, Herbert Spencer stepped on to the stool of repentance and read his recantation and renunciation of the doctrine of natural selection and the survival of the fittest; first doing vicarious penance (unauthorized, however) for Darwin, and then, in no uncertain terms, for himself. There was no mistaking Spencer's meaning. His language was explicit. "The phrases (natural selection and survival of the fittest) employed in discussing organic evolution," he told his readers, "though convenient and needful, are liable to mislead by veiling the actual agencies." "The words 'natural selection,' do not express a cause in the physical sense." "Kindred objections," he continues, "may be urged against the expression into which I was led when seeking to present the phenomena in literal terms rather than metaphorical terms—'the survival of the fittest.' In the working together of those many actions, internal and external, which determine the lives and deaths of organisms, we see nothing to which the words 'fitness' and 'unfitness' are applicable in the physical sense." And he continues: "Evidently, the word 'fittest' as thus used *is a figure of speech.*" Had the sun fallen from the heavens the shock to the followers of Darwin could not have been more stunning than this open apostasy from the Darwinian faith.

Nor was this all. New surprises were still in store for the faithful who still clung to the cherished dogma. Now they find their faith itself assailed, and this, too, by these very selfsame leaders, who had been at such pains

to make them proselytes. There can be little doubt that misgivings regarding the truth of their claims began to haunt the champions of the Darwinian hypothesis. They were just then masters of the whole field of scientific thought. They had brought all science to the feet of Darwin. The few benighted dissenters who still held out against the doctrine were looked upon as not worthy even of contempt. The whole world had adopted the creed of evolution. Was it wantonness then, or was it conscience, that prompted Huxley in what is now a historically famous speech, delivered at the unveiling of a statue to Darwin in the Museum at South Kensington, to openly declare that it would be wrong to suppose "that an authoritative sanction was given by the ceremony to the current ideas concerning evolution?" Well might his hearers be astonished! But they must have held their breath, when they heard him add boldly and bluntly, in no uncertain tones, that "science commits suicide when it adopts a creed." A creed, indeed! What had science been doing in the field of evolution ever since Darwin has given his doctrine to the world, but proclaiming its faith in the Darwinian creed?

There was no blinking the inevitable conclusions. Both Huxley on the platform and Spencer in the *"Nineteenth Century"* had acknowledged before the whole world that they had lost faith in the idol which for thirty years they had so vociferously worshipped. It is true that both Spencer and Huxley might have intended to warn biologists merely against a too implicit faith in natural selection or the survival of the fittest. But even so, the position of their followers was little to be envied. Their leaders had confidently assured them that Darwin had given to the world coveted knowledge never known until he had discovered it. This had been loudly and confidently proclaimed from the housetops of science; and

now—strange reversal—those same leaders tell them that their preachments were of a faith without foundation.

The words of Professor Osborn may be adduced: "Between the appearance of *'The Origin of Species'* in 1859 and the present time there have been great waves of faith in one explanation and then in another; each of these waves of confidence has ended in disappointment, until finally we have reached a stage of very general scepticism. Thus the long period of observation, experiment and reasoning which began with the French philosopher Buffon, one hundred and fifty years ago, ends in 1916 with the general feeling that our search for causes, far from being near completion, has only just begun."

Sir William Dawson, of Montreal, the eminent geologist, said that the evolution doctrine is "one of the strangest phenomena of humanity, a system destitute of any shadow of proof," (*"Story of the Earth and Man,"* p. 317). Even Professor Tyndall in an article in the *"Fortnightly Review"* said: "There ought to be a clear distinction made between science in the state of hypothesis and science in the state of fact. And inasmuch as it is still in its hypothetical stage the ban of exclusion ought to fall upon the theory of Evolution. I agree with Virchow that the proofs of it are still wanting, that the failures have been lamentable, that the doctrine is utterly discredited."

One of the ablest evolutionists today is Professor Henslow, formerly President of the British Association. In his book, *"Modern Rationalism Critically Examined,"* he shows that Darwinian natural selection is absolutely inadequate to account for existing facts.

Professor Bateson, who gave the Presidential Address at the Meeting of the British Association for the Advancement of Science, in 1914, bore striking testimony

to the modifications made by recent science in connection with the Darwinian theory. This is what he said among other things: "The principle of natural selection cannot have been the chief factor in delimiting the species of animals and plants. We go to Darwin for his incomparable collection of facts. We would fain emulate his scholarship, his width and his power of exposition, but to us he speaks no more with philosophical authority. We have done with the notion that Darwin came latterly to favor, that large differences can arise by accumulation of small differences."

St. George Mivart as long as thirty years ago wrote an exhaustive treatise entitled, *"The Genesis of Species,"* in which he subjects the Darwinian hypothesis to a searching examination, and discards it as unproven in every particular and contradicted by the facts of nature in many points. He called it "a puerile (childish) hypothesis."

Professor H. H. Gran of Christiana University, an expert in biology, says he believes in evolution, but declares Darwin's explanation of it to be inadequate. His words are: "Darwin collected a great mass of stuff both from the animal as well as from the vegetable kingdom, but these collections were not thoroughly sifted and cannot be used as the basis of theoretical conclusions as Darwin did."

Prof. Fleischman, of Erlangen, says: "There is not a single fact to confirm Darwinism in the realm of Nature." Drs. E. Dennert, Hoppe and von Hartmann; Profs. Paulson and Rutemeyer, and the talented scientists Zoeckler and Max Wundt, have given up Darwinism. Men like our own H. F. Osborn may still cling to the beloved theory and furnish imaginary pictures of ape-men as proof, in recent books; but hear Prof. Ernest Haeckel himself:

"Most modern investigators of science have come to the conclusion that the doctrine of evolution, and particularly Darwinism, is an error, and cannot be maintained." This was said some years before the Great War. Other names (Friedmann, de Cyon) might be added.

The present attitude of naturalists toward the theory may be learned from a symposium by a number of eminent writers in a recent number of the "Biblical World" (February, 1913), on the theme, "Has Evolution Collapsed?"

Prof. Moulton, of Chicago, says: "The essence of evolution is that the order which exists one day changes into the order which will exist on succeeding days, in a systematic manner, rather than in an irregular and chaotic one." This states the theory, but adds a mere platitude, for all believe that the universe is orderly and not chaotic. The real question is, What is the nature and the cause of the prevailing order? This question he does not attempt to answer.

Prof. Lillie, of Chicago, tells us that there are "differences in opinion among recent investigators concerning the method of evolution," and says: "Opinion in reference to this matter is in a state of flux."

Prof. Mathews, of Chicago, says: "While the fact of evolution is universally admitted, the means by which evolution is brought to pass are uncertain."

Prof. Patten, of Darmouth, says: "As for biologists, they are now farther from agreement as to what constitutes the processes and conditions essential to organic evolution, * * * than they were a generation ago."

Prof. Mall, of Johns Hopkins, says: "It is true that gradual evolution, as advocated by Darwin, is seriously questioned by those who believe that it takes place by 'rapid jumps.'"

Prof. Williston, of Chicago, says: "The causes of organic evolution are still an unsolved problem; and he will be a greater man than Darwin, who finally demonstrates them."

Thus these recognized authorities, while accepting the theory, add many limitations and admit that the "method," the "manner," the "process," the "conditions" and the "causes" of the movement are still unknown. What, then, remains of the theory? Not much but the name.

CHAPTER NINE.

Man.

"There is no longer any doubt among scientists that man descended from the animals." This sweeping statement was made in 1920 by Edwin Grant Conklin professor of biology in Princeton University. And so evolutionists generally, while giving up geology as hopeless in regard to the evolution of plants and animals, cling to the doctrine that man has ascended, through long ages of development, from the brute. We have seen that Wallace and other profound students of the subject recognize the essential difference between the faculties of man and the instincts of animals. They admit that forces resident in matter do not account for the origin of Thought. They believe that Spirit,—God,—created something new when intelligence first entered the brain of man. But even Wallace holds that the human *body* is a product of evolution; that there was a common brute ancestor, both for apes and the men. The search for the missing link between man and his animal ancestor is still going on. As soon as any human remains are dug up in the earth, evolutionists begin to measure the skull and bones, and to find how many points of resemblance they have to the apes. If the brain-pan is a bit shallow, or small, or the eyebrows prominent, or the slope of the face acute, or the teeth and jaws large, they announce with much confidence that the "missing link" has been found. But after a while they begin to grow more modest and end in finding other points which show that the specimen was an unmistakable ape, or an unmistakable man, and not something between the two.

One could fill a museum with discarded missing links; and yet men refuse to learn caution, and repeat their shoutings every time a new find is announced. It will be instructive to pass in review a few of the more famous prehistoric remains of man which have at one time and another been declared undeniable proof of a development, through intermediate stages, of the human body from the body of a brute.

Pithecanthropus Erectus is the name invented by Haeckel for the "missing link," and given by Dr. Eugene Du Bois, a Dutch physician, to certain remains discovered by him on the island of Java in 1891. The remains consist of "an imperfect cranium, a femur bearing evidence of prolonged disease, and a molar tooth." (Dana, *"Manual of Geology,"* p. 1036.) The discoverer of these bones believed that they are the remains of a being between the man-apes and man. Prof. Virchow and other specialists in anatomy examined this find. It was established that the femur was found a year after the cranium. Some regard the remains as belonging to a low-grade man or to an idiot. (Dana, *I c.*) The cubic measurement of the skull is 60 cubic inches, about that of an idiot, that of a normal man being 90 cubic inches and that of an ape 30. These specimens were found in separate places. The skull is too small for the thigh-bone. The age of the strata in which they were found is uncertain. An authority of the first rank, Prof. Klaatsch, of Heidelberg University, says that the creature "does not supply the missing link."

Dr. Smith Woodward and Dr. Charles Dawson, in reconstructing a man from the *Piltdown skull,* discovered in 1912 on Piltdown Common, near Ucksfield, Sussex, England, built up something essentially monkey-like, with receding forehead, projecting brows, and a gorilla-like lower jaw. Prof. Keith, a renowned specialist,

checking up on this reconstruction, comes to an entirely different conclusion. He finds that the work of Drs. Dawson and Woodward was done "in open defiance of all that scientists know about skulls, whether ancient or modern." His words are: "I soon saw that the parts of the reconstructed Piltdown skull had been apposed in a manner which was in open defiance of all that was known of skulls, ancient and modern, human and anthropoid. Articulating the bones in a manner which has been accepted by all anatomists in all times, I found that the brain-chamber, instead of measuring 1,070 cubic cm., as in Dr. Smith Woodward's reconstruction, measured 1,500 cubic cm.,—a large brain chamber for even modern man."

The *Neanderthal skull* was found in 1856 in the neighborhood of Duesseldorf by Dr. Fuhlrott, of Elberfeld. When the skull and other parts of the skeleton were exhibited at a scientific meeting held at Bonn the same year, a wide divergence of opinion at once developed among the specialists. By some, doubts were expressed as to the human character of the remains. Others held that the remains indicate a person of much the same stature as a European of the present day, but with such an unusual thickness in some of them as betokened a being of very extraordinary strength. Dr. Meyer, of Bonn, regarded the skull as the remains of a Cossack killed in 1814. Other scientists agreed with him. Modern science accepts the antiquity of the Neanderthal man, but the controversy has never ceased. The great Virchow declared the peculiarities of the bones to be the result of disease.

Near Liege, in Belgium, not more than seventy miles from the Neanderthal, the *Engis skull* was found. After careful measurement it was proved not to differ materially from the skulls of modern Europeans.

Such experiences should prevent us from making any assertions respecting the primitive character, in race or physical conformation, of these cave-dwellers. Indeed, Prof. Huxley, in a very careful and elaborate paper upon the Neanderthal and Engis skulls, places an average skull of a modern native of Australia about half-way between those of the Neanderthal and Engis caves. Yes, he says that, after going through a large collection of Australian skulls, he "found it possible to select from these crania two (connected by all sorts of intermediate gradations), the one of which should very nearly resemble the Engis skull, while the other would somewhat less closely approximate to the Neanderthal skull in size, form, and proportions." "The Engis skull, perhaps the oldest known, is," according to Prof. Huxley, "a fair average skull, which might have belonged to a philosopher, or might have contained the thoughtless brain of a savage." In this opinion Mr. Huxley is supported by one of the greatest anthropologists of his time, Daniel G. Brinton, who says concerning the cave-man of France and Belgium: Neither in stature, cranial capacity, nor in muscular development did these earliest members of the species differ more from those now living than do these among themselves. We have no grounds for assigning to these earliest known men an inferior brain or a lower intelligence than is seen among various savage tribes still in existence."

Every new find, upon investigation, proves the truth of Virchow's words: "We must really acknowledge that there is a complete absence of any fossil type of a lower stage in the development of man. Nay, if we gather together all the fossil men hitherto found, and put them parallel with those of the present time, we can decidedly pronounce that there are among living men a much greater proportion of individuals which show a relatively in-

ferior type than there are among the fossils known up to this time. . . . Every positive progress which we have made in the region of prehistoric anthropology has removed us farther from the demonstration of this theory!"

Quite recently (in 1913) a remarkable fossil was found in the Oldoway gulch in northern German East Africa, by an expedition of the Geological Institute of the University of Berlin. The remains consist of a complete skeleton, which was found deeply imbedded in firm soil. Unquestionably ancient as these remains are,—the bones are completely fossilized,—they contained lamentably few "primitive characteristics," and hence have not been exploited in the interest of the evolutionary theory. A fragment of skull, a tooth, a thigh-bone, offer much more inviting fields to the evolutionists, since they permit his imagination to range without the restraint of fact. The Oldoway fossil, which is in every essential respect a normal human skeleton, possesses no special attractions for those who would represent man as a descendant of brutish ancestors.

Says Prof. Virchow: "We seek in vain for the missing link; there exists a definite barrier separating man from the animal which has not yet been effaced—heredity, which transmits to children the faculties of the parents. We have never seen a monkey bring a man into the world, nor a man produce a monkey. All men having a Simian (monkey-like) appearance are simply pathological variants, (abnormal varieties, due to some diseased condition). It was generally believed a few years ago that there existed a few human races which still remained in the primitive inferior condition of their organization. But all these races have been objects of minute investigation, and we know that they have an organization like ours, often, indeed, superior to that of the supposed higher races. Thus the Eskimo head and the head of

the Terra del Fuegians belong to the perfected types. All the researches undertaken with the aim of finding continuity in progressive development have been without result. There exists no proanthrope, no man-monkey, and the 'connecting link' remains a phantom."

Dr. Berndt, of Berlin, recently said in the *"Naturwissenschaftliche Rundschau der Chemikerzeitung"* (April, 1914): "Max Weber, one of the best authorities on mammals, regards the anthropoid apes of to-day as a branch *parallel* to the human branch. Scholars like Cope, Adloeff, Klaatsch, prefer to push the origin of man back to the earliest age of terrestrial life, whence he went his way *from the very outset* separate from the apes." This is a highly significant utterance. It means nothing more than this: there is not one recognizable link which unites man with the animal kingdom. All the intermediate forms between man and the original jelly-fish, which according to Haeckel and Vogt was his ancestor, have disappeared. For their existence we have nothing but the word of speculative scientists.

Concerning the Neanderthaler, the Cro-Magnon man, etc., Dr. Dawson has said: "Geological evidence resolves itself into a calculation of the rate of erosion of river valleys, of deposition of gravel and cave-earths, and of formation of stalagmite crusts, all of which are so variable and uncertain that, though it may be said that an impression of great antiquity beyond the time of received history has been left on the minds of geologists, no absolute antiquity has been proved; and while some, on such evidence, would stretch the antiquity of man to even half a million years, the oldest of these remains may, after all, not exceed our traditional six thousand. These skeletons tell us that primitive man had the same high cerebral organization which he possesses now, and we may infer the same high intellectual and moral nature,

fitting him for communication with God and headship over the lower world." Similarly Figuier held that "we know of no archaeological find (stone hatchets, etc.) that could not be pronounced only five thousand years old as well as fifty thousand."

Lionel S. Beale, the famous microscopist, testifies: "In support of all naturalistic conjectures concerning man's origin, there is not at this time the shadow of scientific evidence."

William Hanna Thomson, M.D., LL.D., Physician to the Roosevelt Hospital; Consulting Physician to New York State Manhattan Hospital for the Insane, who has held a professorship in New York University Medical College; been president of the New York Academy of Medicine , etc, in his recent book. *"What is Physical Life?"* says concerning the doctrine of evolution: "No contradiction could be greater than that between this doctrine and the greatest truth which underlies this human world."

The Russo-French physiologist, M. Elie DeCyon, for many years professor in the Faculty of Sciences and in the Academie Medico-chirurgicale at the University of Petrograd, has lately published a book of essays in which he says that the theory of evolution, especially in its relation to the ancestry of man, is a "pure assumption." He quotes Prof. Fraas, who devoted his long life to the study of fossil animals: "The idea that mankind has descended from any Simian (ape) species whatsoever, is certainly the most foolish ever put forth by a man writing on the history of man. It should be handed down to posterity in a new edition of the Memorial of Human Follies. No proof of this baroque theory can ever be given from discovered fossils." And to quote from another address by Virchow, delivered at Vienna: "I have never found a single ape skull which approaches at all the hu-

man one. Between men and apes there exists a line of sharp demarcation."

One of the most recent authoritative publications by a German anthropologist urges that "the apes are to be regarded as degenerate branches of the pre-human stock." This means, in a word, that man is not descended from the ape, but the ape from man. This is almost what may be called *reductio ad absurdum,* and yet it is one of the latest pronouncements of scientific thought (Editorial in *"New York Herald,"* December 30, 1916). To the same effect are the words of Professor Wood-Jones, Professor of Anatomy in the University of London, England, who recently pointed out that so far from man having descended from anthropoid apes, it would be more accurate to say that these have been descended from man. This was claimed not only by reason of the best anatomical research, but to be "deducible from the whole trend of geological and anthropological discovery." On this account Professor Wood-Jones appealed for "an entire reconsideration of the post-Darwinian conceptions of man's comparatively recent emergence from the brute kingdom." (Quoted by W. H Griffith Thomas in *"What about Evolution?"* p. 19.)

It is refreshing to turn aside from speculation to revelation, from conjectures and theories to proven facts, and no one has stated ascertained facts, touching the origin of man, more succinctly and more clearly than Prof. Dr. Friedrich Pfaff, professor of Natural Science in the University of Erlangen. He shows conclusively that the age of man is comparatively brief, extending only to a few thousand years; that man appeared suddenly; that the most ancient man known to us is not essentially different from the now living man, and that transitions from the ape to the man, or from the man to the ape, are nowhere found. The conclusion he reaches

is that the Scriptural account of man, which is one and selfconsistent, is true; that God made man in his own image, fitted for fellowship with himself and favored with it —a state from which man has fallen, but to which restoration is possible through Him who is the brightness of his Father's glory, and "the express image of his Person."

We cannot refrain from reverting, in this connection, to the essential difference between the animal instincts and the intellect of man, and would quote, on this subject, the forceful statement of the case by Paul Haffner in his *"Materialismus"* (Mainz, 1865). We translate: "If the hypothesis of materialism were acceptable, if we were to believe that a merely animal form of consciousness might develop into spiritual and intellectual perceptions, we ought to be able to observe such capacities of change and growth also in the animal world of to-day. Yet this is not the case. For thousands of years we have observed the domestic animals, and still we can see no trace of a dawn of intellect. We expend much training upon them; we make them our confidants and treat them with inexhaustible tenderness, and still we never see them rise out of their narrow sphere and out of the bonds of their primitive desires and instincts. We note external imitation of human activities, such as the ludicrous virtuosity of the apes, and that superficial adaptation which we call 'animal training' and which is nothing but a development of sense stimuli; the animal does not know what it is doing, it is duped by man who knows how to employ its instincts and make them serviceable to his purposes. We cannot fail to note that never, not even under the most favorable conditions, do the animals step out of their original sphere; that neither by their own efforts nor through the aid of man are they able to rise into ideas of a spiritual or suprasensual nature; that they remain forever what they were in the be-

ginning. Hence it cannot be denied that also men would have remained what they once were according to the notions of materialists. Only if from the beginning the light of spiritual life was enkindled in them, could they become, what they are to-day." (*"Materialismus,"* p. 59 f.)

It will be noted that when we hear the specialists in anatomy and biology, their expressions on the subject of man's ancestry are, as a rule, characterized by a strong dissent from the development theory, while the belief in a development of man from an ape-like ancestor, uttered with a note of cocksureness, is found mainly among amateurs in these sciences. Moreover, even among the believers in a rise of our race from brute origins, many, and the most distinguished among them, assert that the faculties of the human mind are indeed to be accounted for only on the basis of a special creative act of God. They cling, however, to the notion that the body of man is evolved from the lower animals, —a view which has been very ably met by Prof. Orr of Glasgow, one of the foremost Biblical scholars of our time. He writes:

"It is well known that certain distinguished evolutionists, while handing over man's body to be accounted for by the ordinary processes of evolution, yet hold that man's mind cannot be wholly accounted for in a similar manner. The rational mind of man, they urge—I agree with the view, but am not called upon here to discuss it —has qualities and powers which separate it, not only in degree, but in kind, from the animal mind, and put an unbridgeable gulf, on the spiritual side, between man and the highest of the creatures below him. In other words, there is, in man's case, a rise on the spiritual side—the constitution of a new order or kingdom of existence—which requires for its explanation a distinct supernatural

cause. Now the weakness of this theory, I have always felt, lies in its assumption that, while man's mind needs a supernatural cause to account for it, his body may be left to the ordinary processes of development. The difficulty of such a view is obvious. I have stated the point in this way. 'It is a corollary from the known laws of the connection of mind and body that every mind needs an organism fitted to it. If the mind of man is the product of a new cause, the brain, which is the instrument of that mind, must share in its peculiar origin. You cannot put a human mind into a Simian brain.' In other words, if there is a sudden rise on the spiritual side, there must be a rise on the physical—the organic—side to correspond." (*"Virgin Birth of Christ,"* p. 199.)

Can anything be more cogent, more conclusive?

The strongest *direct* proof against the "ascent of man," however, has so far only been touched upon. I refer to the evidences derived from the history of Religion. To this I now invite the reader's close attention.

If man was developed from a lower order of creatures, or from any member of the animal kingdom, religion must have been a late development. That this "tailless, catarrhine, anthropoid ape" should have had anything resembling a religion, is, of course, not to be thought of. To imagine that he had a knowledge of the one, true God, his nature and his attributes, would be preposterous. How then explain the origin and rise of religion? The evolutionists do not agree on this subject. Herbert Spencer maintains that *Animism* was the most primitive form of faith. Man reverenced spirits, the ghosts of the departed, then raised them to the eminence of divinities and finally developed the idea of *one* absolute being, God. Others suggest, that primitive man first adored the terrible powers and awful phenomena of nature, was thus led to Polytheism (a

religion of many Gods) and finally evolved Monotheism (a belief in one God). But all agree in this, that Religion in its earliest form was of a very crude and elementary character, and only in the course of many thousands of years, attained to the conception of one Supreme Being. There was at first a faith in gods,—Polytheism, and much later a faith in God—Monotheism.

Now, let it be observed that this is the only *possible* view from the standpoint of Evolution. Remember that this doctrine is not only conceived as bearing on the development of the animal kingdom. The principle is assumed to operate in the development of the earth, of man, of society, of government, of manufactures, of language, of literature, science, art, and religion. According to the theory, there must have been progress from a crude form of spirit-worship to a worship of gods, and thence to a worship of one God. But what are the facts? Has religion so developed? It has not.

Not only has history failed to show a single form of belief which has advanced in the manner demonstrated, but every religion, no matter how pure and exalted, has gone through a process of degeneration, of devolution.

The founders of the comparative study (or Science) of Religion, and the greatest authorities in its various departments, are practically unanimous in their opinion, that all pagan systems of mythology and religion contain remnants of a more exalted form of belief, of a higher, clearer knowledge of the Divinity, which gradually became dimmed and corrupted.

From Max Mueller's Lecture on the *Vedas* (the ancient hymns of India) we quote the following: As a result "to which a comparative study of religion is sure to lead, we shall learn that religions in their most ancient form, or in the minds of their authors, are generally free from many of the blemishes that attach to them in later times."

Le Page Renouf expresses his entire agreement with the "matured judgment" of Emmanuel Rougè: "The first characteristic of the Egyptian religion is the Unity of God most energetically expressed: God, One, Sole and Only—no others with Him. . . . the Only Being . . . . The belief in the Unity of the Supreme God and in His attributes as Creator and Lawgiver of man, whom He has endowed with an immortal soul, ... *these are the primitive notions,* enchased in the midst of mythological superfetations accumulated in the centuries." Franz Lenormant reached the same conclusion. Elsewhere, Renouf says: "It is incontestably true, that the sublimer portions of the Egyptian religions are not the comparatively late result of a process of development. The sublimer portions are demonstrably ancient; and the last stage of the Egyptian religion . . . . was by far the grossest and most corrupt." (*"Religion of Ancient Egypt,"* p. 95.) This opinion is supported by the testimony of the Egyptian inscriptions. In the very oldest inscriptions reference is had to a Supreme God and Lord of all, to whom no shrines were raised, whose abode was unknown, who was not graven in stone, while the Egyptian of a later day adored the crocodile, the ichneumon, serpents, bulls, cats, and ibises.

The history of Hindu belief presents testimony of a still more startling nature. In the Vedas we find statements and prayers which are clear proof of an early Monotheism. Thus the IX book of the Rig Veda contains the following prayer. "Who is the God to whom we shall offer our sacrifice? The one-born Lord of all that is; he established the heaven and sky; he is the one king of the breathing and awakening world; he through whom the heaven was established; he who measured out the light in the air—he who alone is God above all gods." Here the belief in one Supreme Being is clearly set

forth. And yet this faith in one God in the course of time degenerated into a worship of 33,000 divinities—until Gautama the Buddha evolved a system that denied the very existence of God.

Turning to Greece we have the testimony of Prof. Max Mueller to this effect: "When we ascend to the distant heights of Greek history the idea of God, as the Supreme Being, stands before us as a simple fact." (*"Essays,"* II, p. 146.) Carl Boettcher, in his great work on the Treeworship of the Greeks, maintains: "As far as the legends of the Greeks can be traced into prehistoric ages, the entire nation worshipped a single God, nameless, without statues, without a temple, invisible and omnipresent." This he regards as a tradition of "irrefutable inner truthfulness. . . . The beginning of Polytheism therefore represents the *second* phase of Greek religion, which was preceded by a Monotheism." Every student of Greek literature knows that this original belief at an early age gave place to a worship of the gods on Olympus, a worship which in turn gave way to openly avowed atheism. The Greeks were aware of this decay. Plato, in his Phaidros (274 B) quotes Socrates as saying: "I know of an old saying, that our ancestors knew what constituted the true worship of God; if we could but discover what it was, would we then have need of *human* theories and opinions on the matter?" Certainly a startling statement from the lips of a pagan. Undoubtedly Welcker was right when he asserted, as the ultimate result of his researches: "This (Greek) polytheism has settled before the eyes of men like a high and continuous mountain range, beyond which it is the privilege only of general historical study to recognize, as from a higher point of view, the natural primitive monotheism." Concerning the monotheistic ideas of later Greek thought, the same author says that they are to be regarded *not* as a result of an ascend-

ing line of evolution ("aufsteigende Linie der Entwickelung"), but as "a *return* of the profound wisdom of old age to the feeling of primitive simplicity."

Of the Phoenicians the greatest student of their history and religion, F. K. Movers, says: "Nature worship gradually obscured the purer God-idea of a more ancient stage of belief, but has never entirely obliterated it." He refers to an evident "adulteration of a purer and more ancient God-idea."

Regarding the Zoroastrians of ancient Persia, M. Haug, the famous Zend scholar, asserts that "Monotheism was the leading idea of Zoroaster's theology;" he called God Ahura-mazda, i. e., "the Living Creator." Zoroaster did not teach a theological Dualism. He arrived "at the idea of the unity and indivisibility of the Supreme Being," and only as "in course of time this doctrine was changed and *corrupted* . . . the dualism of God and the devil arose." "Monotheism was *superseded* by Dualism."

Both Dr. F. Hommel and Friedrich Delitzsch agree on the question of an early Arabian and Sumerian monotheism. Dr. Hommel demonstrates from the personal surnames contained in the inscriptions the existence of a "very exalted monotheism" in the most ancient times of the Arabian nation, about 2500 B. C., and among the Semitic tribes of northern Babylonia. This "monotheistic religion" degenerated under the influence of Babylonian polytheism. The same opinion was held years ago by Julius Oppert, the Assyriologist, who was led to a belief in "a universal primitive monotheism as the basis of all religions."

Expressions similar to the above might be adduced from Rawlinson, Legge (*"Religions of China"*), Doellinger, Victor v. Strauss-Torney (the Egyptologist), Jacob

Grimm, and others. In short, the majority of independent and unprejudiced students of heathen beliefs, from the days of A. W. v. Schlegel to our own, have reached the conclusion, that all religions in their later stages exhibit a much lower conception of the Divinity than in their earlier form. It is only the hopelessly prejudiced who can say, as does John Fiske, that "to regard classic paganism as one of the degraded remnants of a primeval monotheism, is to sin against the canons of a sound inductive philosophy." Sinning against the consonant testimony of universal history is a venial offense, it would seem, when the integrity of this "sound inductive philosophy"—that is, of the Spencerian theory—is at stake. It needs but a glance at the well-known facts of religious history to show the working of this *Law of Decay* as influencing the development of every system of ethnic belief which has a recorded history or a literature.

The workings of this law can be traced even in the case of the savage tribes of our own day. Of the African negroes, P. Baudin says that "their traditions and religious doctrines . . . show clearly that they are a people in decadence. . . . They have an obscure and confused idea of the only God, ... who no longer receives worship." (*"Fetichism,"* p. 7-10.) Winwood Reade testifies: "The negroes possess the remnants of a noble and sublime religion, though they have forgotten its precepts and debased its ceremonies." They still retain a recollection "of God, the Supreme, the Creator." Concerning the Zulus, Bastian records that they informed him that "their ancestors possessed the knowledge of . . . . that *source of being* which is above, which gives life to men." (*"Vorgeschichtliche Schoepfungslieder."*) A missionary of the Lutheran General Synod, Rev. J. C. Pedersen, wrote in *"Lutheran Observer,"* August, 1910, concerning the African natives that they still have a considerable

display of religion, but "ask him, who is the God in whom you trust? what do you mean by trusting? how can he help you? and he will answer, 'I don't know, but the old people used to say so, and taught us to say so.'" John Hanning Speke, in his *"Journal of the Discovery of the Sources of the Nile"* records reminiscences among the degraded savages among whom he dwelt, of a supreme God who dwells in heaven, but who no longer received worship. Mungo Park, in the diary of his *"Travels in the Interior of Africa,"* says that the Mandingoes, a degenerate race of fetish worshippers, still possessed the knowledge of one God, but do not offer up prayers and supplications to him.

In the record of his famous circumnavigation of the globe, Captain Cook says that the cannibals of New Zealand still acknowledged a superior being, although their religion was a crude system of spiritualistic practices.

Concerning the Koreans Mrs. L. H. Underwood, medical missionary, says that a thousand unworthy deities now crowd the temples, although the great universal Ruler is still worshipped at times, and the "ancient purity of faith and worship has become sadly darkened."

The foremost student of modern missions, Johann Warneck, in *"The Living Christ and Dying Heathenism"* (F. H. Revell Co.,) comes to the conclusion that the Christian religion and its monotheism are not only not a development from lower origins, but that the heathen religions, historically considered, are a degeneracy from a higher knowledge of God. In other words, the application of the doctrine of evolution to the field of comparative religion is a mistake. "Any form of Animism known to me has no lines leading to perfection, but only incontestable marks of degeneration," says the author. "In heathenism the gold of the divine thought becomes dross."

Says he, "I have been counselled to recognize that the idea of evolution at present ruling the scientific world must also rule in the investigation of religion. I am not unacquainted with the literature of the subject, I have described animistic heathenism as concretely as I could; I confined myself strictly to that. I began with the facts of experience; then I drew inferences from them. If these do not agree with the dominant hypothesis of evolution, that is due to the brutal facts, and not to the prepossessions of the observer.

"I do not deny that something can be said for the idea of evolution in the religions of mankind, but the study of Animism, with which I have long been familiar as an eyewitness, did not lead me to that idea. Rather the conviction which I arrived at is, that animistic heathenism is not a transition stage to a higher religion. There are no facts to prove that animistic heathenism somewhere and somehow evolved upwards towards a purer knowledge of God. I have worked as a missionary for many years in contact with thousands of the adherents of animistic heathenism and I have been convinced that the force of that heathenism is hostile to God."

In the same work Dr. Warneck says that among the Battaks of Sumatra there are "remains of a pure idea of God," but there is also a host of spirits, born of fear, which thrust themselves between God and man. "The idea of God which is found in the religions of the Indian Archipelago, and probably also of Africa, cannot have been distilled from the motley jumble of gods and of nature, for it exists in direct opposition to the latter. The idea of God is preserved, but His worship is lost." In reviewing this book the late Dr. Schmauk said in 1910: "A dispassionate study of heathen religions confirms the view of Paul that heathenism is a fall from a better knowledge of God. The idols come between God and man."

W. St. Clair Tisdall, concludes an exhaustive study of *"Christianity and Other Faiths"* with the statement: "It follows that Monotheism historically preceded Polytheism, and that the latter is a corruption of the former. It is impossible to explain the facts away. Taken together they show that, as the Bible asserts, man at the very beginning of history knew the One True God. This implies a Revelation of some sort and traces of that Revelation are still found in many ancient faiths."

We conclude that the history of religion does not only fail to support the evolutionistic postulate of a slow upward development of religions from crude original beliefs, but quite the reverse. It is true that the popular handbooks of comparative religion quite generally teach a development of religious belief through animism, fetishism, and polytheism to monotheism. But the consonant testimony of specialists in the field of historical study and of those who have had first-hand acquaintance with the aborigines of heathen lands, is a strong dissent from this position. Here again we find confident assertion of an evolutionistic process mainly among those who lack the qualifications of original research. Even as it is not the specialist in biology that still maintains the Darwinian theory of Natural Selection, but the non-professional and the amateur, even so the specialist acquainted with the original sources, and the explorer, possessing first hand knowledge, asserts a decline, through history, from purer to less spiritual faiths, while the bias of the evolutionist, who has no first hand knowledge of the sources constrains him to begin his scheme of religion with animism and fetish-worship. The theory which holds him in thrall demands such a construction. But the theory is contradicted by the facts, which point unmistakably to a degeneration of the race, to a Fall of Man.

CHAPTER TEN.

The Verdict of History.

John Fiske, who, in the seventies of the last century, popularized Darwinism in the United States, asserts that the scope of evolution is much wider than the organic field. "There is no subject great or small" he wrote in *"A Century of Science,"* "that has not come to be affected by this doctrine." A development has been recognized in plants, mountains, oysters, subjunctive moods, and the confederacies of savage tribes (p. 35). Fiske is one of those defenders of the evolutionistic philosophy who irritate by reason of their cocksureness. Hear him, in *"Darwinism and Other Essays:"* "One could count on one's fingers the number of eminent naturalists who still decline to adopt it"—the Darwinian hypothesis. That was in 1876. To-day we know that one can count on one finger the eminent naturalists of the present century who still accept it—Haeckel. It is possible that Fiske's extension of the development theory, along lines laid down by Herbert Spencer, to all human history, even to "tribal confederacies," is likewise subject to a revision. Indeed, it would seem that even without special or detailed knowledge, the failure of human history to conform with this universal law would be apparent. Consider once more the basic concepts of Evolution. They are two in number. 1. Everything that is, has been evolved, having been involved (potentially, as a possibility) in that which preceded it. Potentially, the feather of the blue-bird was in the speck of original protoplasm, potentially the flights of Dante's and Goethe's genius were

in the primordial cell. All that has occurred in history has *developed* out of antecedents. Furthermore: 2. All that exists has developed *according to natural laws.* Scientists have given up the law which Darwin called "Natural Selection," and Spencer himself cashiered the law which he had called "Survival of the Fittest." But evolutionists continue to assert that somehow, by the action of certain laws, that which exists has naturally—there is no need of divine Providence, overruling the affairs of men,—has naturally been developed out of its antecedents. And so history is read by the evolutionist. He sees in all the institutions of civilization, in every department of culture, in the rise and fall of nations, the progress and decay of literatures, a result of natural laws, working out the evolution of human society as it exists to-day.

What, then, is the verdict of history? Does it conform to this scheme? Is there a demonstrable development, by inherent forces, of human society, from lower to higher ranges of culture? Civilizations have risen, civilizations have perished: is there in this traceable the working of natural law?

Dr. Emil Reich, in the "*Contemporary Review,*" 1889, p. 45 ff. pointed out the failure of the development theory as applied to human culture. Hebrew religion as well as the Hebrew state were not derived from Babylonian, Egyptian, Arabic or Hittite culture; Greek art is not a derivative product of Egyptian, Assyrian, or Phoenician art; Greek religion and mythology are not derived from other pagan systems; Roman law has not been developed out of Greek, Aryan, or Egyptian law; the English constitutional form of government has no antecedents in German or Norman-French history; German music is not a result of development out of Dutch, French, or Italian music. Dr. Reich sums up the matter: "Institutions do

not 'evolve,' nor are they 'derived,' they step into existence by fulguration"—sudden flashes—," by a process that is technically identical with the theological idea of creation. The whole concept of evolution does not at all apply to history."

In this argument there is considerable force. For, indeed, what natural law can account for the rise of human institutions, so infinitely diversified in their structure? Every age is divided into epochs, and at the center of each epoch there is some personage of force and genius. But how did Cromwell, Lincoln, Bismarck arise? What force produced them? Whence did they evolve? Yet without these three names, three great periods in the world's history would be meaningless.

By what combination of forces shall we say that the various geniuses have developed which, in a manner almost spectacular, rise before us as we study the literatures of the past? The youthful years of Shakespeare were spent under circumstances which might have produced in him one dull and unaspiring British country lout, like, as one egg to another, to a hundred thousand others who lived in his age. What made this one country boy the most astonishing genius in all the history of literature? Study the youth of Robert Burns, of Heinrich Heine, or Coleridge, and then tell me why the first two should become the greatest lyric poets of their time, and the third, one of England's deepest thinkers? Why did they not develop, one into a satisfied Scottish farmer, the other into a peddler of notions, and the third into a fat and comfortable English banker?

We quote from an article which appeared in *"Theological Quarterly"* some twenty years ago:

"What process of evolution resulted in the lives and deeds of such men as Alexander the Great, Julius Cæsar,

Constantine the Great, Luther, Napoleon I, and Bismarck? All these great makers of history were what they were far less in consequence and by the continuation of the course of previous events or developments, than largely in spite of the past and in direct opposition to forces which had worked together in shaping the condition of things with which they had to deal. The Macedonian empire would never have sprung into being but for an Alexander, in whose mind the chief facts for its realization were united. The Rome which Julius Ceasar left behind him was not that which he had found, only carried forward to a new stage of development, but the embodiment of ideas conceived in his mind, a quantity which under God the greatest Roman had *made* out of a quantity which he had found. The distinctive features of the Constantinian empire as compared with that of Diocletian, or of the tetrarchy of which he was the head, were not evolved from earlier political principles, but stood out in bold contrast and even in direct opposition to the very fundamentals of antique statesmanship, and so new in politics that even Constantine permitted them to slip away from his grasp long before the sunset of his life had come. Luther was not a more fully developed Hus or Savonarola, and the Reformation was not the more advanced stage or completion of a movement inaugurated by the Humanists, but a work of God the actuating spirit of which was as diametrically contrary to the rationalistic spirit which animated Erasmus and, in a measure, Zwingli and his abettors, as it was to antichristian Rome,—which was in 1517 essentially what it had been in 1302, when Boniface VIII issued his bull *Unam sanctam* as a definition of the rights and powers of Popery. Napoleon did not carry onward but broke away from the tumult of French politics when he laid the greater part of western Europe at his feet, and the

battle of Austerlitz and the rule of the Hundred Days were no more evolved from the French Revolution as by intrinsic necessity than the burning of Moscow and the Russian snows which turned to naught the campaign of 1812." (A. L. Graebner.)

According to the theory we would expect that in the various departments of *art,* perfection would be a late blossom, burgeoning forth only after ages of feeble experiment and attempt. But what are the facts? As we study the history of any art,—be it literature or any department of literature; be it architecture, sculpture, the domestic arts, or even the art of war,—we find the highest culmination either at points which specifically exclude the idea of a development or, indeed, perfection shines forth in the very beginning, all subsequent art being decay and apostasy from that primal perfection.

In epic poetry, the greatest work does not stand at the end of a long period of development, but the first and oldest is the greatest. Nothing has ever been produced to equal the Iliad and Odyssey, written 900 B. C. We have epics that will always hold a prominent place in literature, Virgil's Aeneid, Milton's Paradise Lost, but neither these nor the many flights attempted into epic poetry before or since will be seriously considered as rivalling the rhapsodies of Homer.

The first novel ever written, Cervantes' Don Quijote, remains one of the greatest.

The oldest dramatists, Aeschylus, Euripides, Sophocles, have never been surpassed.

And so in every department of art, the earliest stage of development seems to be the very most perfect. Pyramid building was a pastime of the earliest Pharaos; the later did not attempt to rival these structures with any of their own. No finer jewelry can be produced to-day than the gold ornaments found in the oldest tombs of

Egypt. The finest examples of East Indian architecture are the oldest. Gothic art was not a slow development but came to utter perfection in its earliest examples,—as in the Cathedral of Amiens.

Evolution represents the history of our race as a constant climb, from brute or near-brute beginnings, to ever higher forms of civilization, until the heights which our race has reached in the present century were attained. In reality, the reverse process, a constant and invariable process of degeneration characterizes the history of nations and peoples. Where Christianity entered as a factor, as in the history of Western Europe and in the results of Christian missions in heathen lands, we can indeed observe a rise out of barbaric or savage conditions to refinement and culture. But only where the Christian gospel is preached, was the natural process of decay, of degeneration, interfered with. Elsewhere, that is to say, where purely natural forces were given free play, mankind has declined physically, mentally, spiritually. All civilizations illustrate this law of decay. Wilhelm F. Griewe, in his *"Primitives Suedamerika"* (Cincinnati, 1893), summarizes his observations on the South American continent as follows: "The Malaysian aborigines of South America, in a period of 3,000 years, failed to advance in development. The Japanese discoverers of Peru testify that they found the natives in a condition of extreme decay; within a period of 1,500 years they had made no progress but had retrogressed. When the Spaniards came, they described the natives of Chile and Argentina in such a manner that it is quite evident how little these tribes had progressed in 3,000 years. The Araucanians of Chile have, even in historic times, greatly degenerated; they have lost the very meaning of many words; retaining the shell, they have lost the kernel. In Peru, the age of heroic deeds and wonderful architecture was followed

by decay,—religious, moral, intellectual decay. The population was all but destroyed by vices and cruelty. Their neighbors, the Chibchas, likewise described an arc which ended in devil-worship. Similarly, the history of the Botokudes is degeneration, vice, atrocities. The negro tribes in the north and east of South America record no progress, but, on the other hand, sank into abominations, slavery, cannibalism. Where, then, is there support for the evolutionary theory, with its assumption of an upward trend from a brute condition to civilized and cultured life? Everywhere in primitive South America we see before our very eyes the process of decline and decay. Also the religious idea became obscured. Some of these tribes had an original monotheism. They recognized a supreme creator of all things and gave him various names But the spiritual character of their knowledge of God was gradually obscured, God was dragged into the sphere of sense and lower divinities were associated with Him,—a downward development which absolutely contradicts the Darwinian hypothesis. From an original, pure, spiritual worship to gross idolatry,—that is the religious decay which in the world outside the Bible meets us everywhere, also among the original races of South America."

Thus in the history of human society, we observe, unless the divine power of the gospel supplies the sole preserving and regenerating element, a universal law of decay in human affairs. Innumerable times, and at the most crucial moments of human history, not the fittest but the unfittest survived. Dr. A. L. Graebner said: "The principle of the 'survival of the fittest' is so far from accounting for the phenomena of history, that the principle itself is flatly contradicted and utterly exploded by a sober investigation of historical facts. That there are in nature numerous instances of a survival of the *un*fittest, is not only conceded by our evolutionists, but

has been deliberately forged into an argument against teleology (divine purpose) and divine providence! And, we ask, was it by the survival of the fittest that Julius Ceasar, one of the grandest rulers of all ages, should succumb under the daggers of Brutus and Cassius; that Paul and Seneca should die by authority of their inferior, Nero; that Popery, rotten to the core and represented by men who would have brought on the ignominous collapse or extinction of every other dynasty in the days of the Roman pornocracy, should survive, while the illustrious house of Henry I. sank away to ruin in the third and fourth generation; that John Hus should die at the stake and Jean Charlier de Gerson in timid monastic retirement, while Balthasar Cossa, by far their inferior in talents and learning, and every inch an infamous scoundrel, having for a time disgraced even the Roman see as John XXIII, ended his days as a Cardinal and Bishop of Tusculum and Dean of the Sacred College; that Girolamo Savonarola, one of the most remarkable and pure-minded leaders of his day and of all times, should be fought down and crushed in a struggle with men not one of whom was worthy of unloosing his shoe's latchet, among them Alexander VI, one of the most scandalous wretches of all history? Survival of the fittest!"

The article from which we have quoted points out the relevancy, to the question at issue, of the principle of degeneration and gradual decay in historical organisms or institutions. "Our scientists who bother themselves and others about the descent of man have favored with a keen interest the Bushmen of Australia and other types of savage humanity, with receding skulls, flat noses, thin legs, little or no clothing, and not much of morals or religion. The lower in the scale and the farther remote from the civilized Caucasian a newly discovered or in-

vestigated tribe or specimen, living or dead, would appear to be, the greater was the value set on the discovery, because the nearer science was supposed to have come to the missing link, the transition from brute to man. Of course, the missing link will never be discovered, because it never existed. There is no transition from brute to man, and never was. But if there were a species of beings which might be classed either with man or with brutes, a transitional species, even that would not necessarily represent a transition in the direction from brute to man. We do not say that a transition from man to brute is possible; for it is not; but we do say that the evolutionist who sees in Bushmen and other savages specimens of humanity representing the earlier stages of development, through which the more highly developed species had long since passed on the way from the primitive state of man to their present state, makes a great, fundamental mistake, the same mistake which one would make in supposing that the pale and decrepit inmates of a city hospital or a country poorhouse represented the lower stage of development from which the strong and healthy men and women in the surrounding country had been evolved. Our evolutionists are in very much the same plight with Mark Twain and his friend, who, having slept all day, rushed from the hotel in scanty clothing, climbed the observatory and to the amusement of the guests loudly admired what they took to be the famous Rigi sunrise, while in fact they were vociferating and gesticulating at the setting sun. But while our tourists had soon found out their mistake, our evolutionists have not; which does not make it any less a mistake. St. Paul has drawn a vivid picture of the degenerating influence of sin upon the nations under the righteous wrath of God,* and the course which the Greek nation and the

* Rom. 1, 18-32.

Roman would have run from their pristine vigor exhibited in the days of Thermopylae and Cannae down to the state of *marasmus senilis* pictured by Juvenal, a state of rottenness which even the transfusion of German blood into the putrid veins of that degenerate and decaying race could not remedy, is a fearful corroboration of the apostle's testimony."

We cannot leave this subject without briefly adverting to a great historic fact, indeed, the most massive and significant fact in all history, which, in its remoter bearings, not only strikes at the very heart of the evolutionistic philosophy, but at the same time wounds it mortally in all its parts. I refer to the Resurrection of our Lord. The resurrection of Jesus Christ is the central fact of our Christian belief and it is, rightly understood, the all-sufficient answer to the theory of evolution. Christ's resurrection is an historical fact fully as much as the defeat of Xerxes at Salamis in 480 B. C., the discovery of America by Columbus in 1492, and the peace of Versailles of 1919 are historical facts, proven by the word and record of contemporary witnesses. But if Christ was raised then we have proof for the following tenets, all contradicting evolutionary speculation at so many vital points: 1) The existence of a personal God who is concerned with human affairs; 2) The reality of miraculous interference with natural forces; 3) The truth of atonement and the redemption, and 4) The inspiration of the Old Testament Scriptures (hence also of the creation account in Genesis). The details of the argument are beyond the scope of this paper, but a little patient study will bring to light the fact that each of these four basic ideas is dove-tailed, mortised and anchored so firmly in the fact of Christ's resurrection, that you can get rid of them all only by denying that fact. Hence it is, aside from any investigation of proofs of evolutionism,

clear to the Christian student that there must be some fault either in reason or in observation that vitiates the whole theory. The resurrection of Christ is a fact, a fact to which the entire history of Christianity testifies, the most tremendous fact in the history of the world. And it stands four-square against a theory which says that there is no personal God, that there is no sin, no redemption; that there are no miracles, no revelation, no inspiration; that there is no absolute religion nor an absolute standard of right and wrong.

CHAPTER ELEVEN.

Evidence of Design.

Compare all that has been said by scientists themselves about the evolutionary theory, and what remains? This, only, that some time, we do not know when, life arose, and some how, we do not know by what laws, one form evolved from another, until we and the world about us have become what we are now. Now, the fact that no *laws* have so far been discovered by scientists to account for this presumed development of all things by inherent forces, is very significant and the conclusions which logically follow from it deserve our attention. Since Darwin's solution, Natural Selection, was discarded, twenty or thirty years ago, many other solutions have been propounded, but none has received the assent of even a respectable group of scientists, let alone by all. These solutions,—such as the theories of de Vries and Mendel, are frankly no more than guesses based on certain observation in plant life and insect life and their originators by no means assert that they have found a law by which the universe can be accounted for. But if there is no universal law, there is only *chance*. Hence it is clear that what we are asked to believe is that ancient Greek speculation was after all not far from the truth, that through a fortuitous (accidental) concourse of atoms the world came into being, and that by chance combinations of elements the great variety of living things arose.

Such is the condition of evolutionistic thought to-day. That there is no *direct* evidence for organic evolution is generally admitted. That geology cannot be quoted for it is also quite generally conceded, since the sudden rise of perfect (not half-developed) insects, of perfect fish, of perfect mammals, is clear even to the man who merely turns the leaves of Geikie's, Le Conte's, and Dana's text books, or visits Field's Museum. Yet *some-how* things must have gotten to be what they are by development from earlier forms,—this about sums up what is really contained in the concept of evolution as it appears in most recent scientific literature, so far as scientists at all touch upon the subject. However, they by no means urge the evolutionary principle as they used to do. Bacteriologists especially, so I am informed by a chemist of international repute, Dr. P. A. Kober, of New York, as a class are inclined to give up the theory as a "bad guess." Why, they find in fossil fish diseased portions which bear unmistakable traces of the action of bacteria which live to-day, in other words, which in "countless millions of years" have not progressed enough to show any change recognizable under the most powerful miscroscope! Anthropologists shake their head when they are told by evolutionists that the animal which shows clearest "resemblance" in a structural way, to certain points in human anatomy, is a small fossil ape, about the size of a house cat, with a skull one inch in diameter! There remains no proof, direct or indirect, of any *principle* working the changes which are believed to have occurred. All things have evolved, if they have evolved at all, *by chance.*

Now, over against this doctrine of chance there stands the monumental fact that throughout nature, living and non-living, there runs a principle of *design.* The minerals, the plants, the animals, all exhibit, as even the superficial observer knows or might know, a plan. There is

design in the crystals in which elements exist when they pass from a liquid into a solid state; there is design in the leaf and flower of every plant; there is plan, design, in the structure and physiology of animals. We would add, there is an evident plan in the history of the Chosen Race, the Jews, as we possess it in the Old and New Testaments; there is a plan in the moral sphere, laws producing unvaried results; there is an ordered scheme even in the life of the individual. But let us limit our investigation to the domain of nature. Let us note how little necessity there is for assuming that by mere chance things have come to be what they are.

As a rule each chemical substance has an individual crystal by which it can be distinguished. It is possible to classify the thousands of different crystals, since all belong to one of six classes, according as their surfaces are grouped symmetrically around the axes of the crystal. The salt crystal has one form, the topaz another, quartz and beryl another, borax another, and these forms are absolutely unvaried wherever these substances are found in nature or in the chemist's retort. It is not here our intention to point out how impossible it is to assume that there has been an evoluton of one of these forms out of another. The point is that there is not chance, but orderly arrangement, symmetrical shape, in a word, most evident design.

Turning to plant life, even the amateur student cannot fail to observe that the entire world of plants is built on a beautiful system which argues most powerfully not for accidental arrangement but for plan. The place of every leaf on every plant is fixed beforehand by unerring mathematical rule. As the stems grow on, leaf after leaf appears exactly in its predestined place, producing a perfect symmetry;—a symmetry which manifests itself not in one single monotonous pattern for all plants, but in a

definite number of forms exhibited by different species, and arithmetically expressed by the series of fractions, 1/2, 1/3, 2/5, 3/8, 5/13, 8/21, etc., according as the formative energy in its spiral course up the developing stem lays down at corresponding intervals 2, 3, 5, 8, 13, or 21 ranks of alternative leaves.

The position of each blossom is determined beforehand by that of the leaves; so that the shape of every flower-cluster in a boquet is given by the same simple mathematical law which arranges the foliage. Every flower has a "Numerical Plan." Although not easy to make out in all cases, yet generally it is plain to see that each blossom is based upon a particular number, which runs through all or most of its parts. And a principal thing which a botanist notices when examining a flower is its numerical plan. It is upon this that the symmetry of the blossom depends. Thus the stonecrop and the flax are based upon the number five, which is exhibited in all their parts. Some flowers of this same stonecrop have their parts in fours, and then that number runs throughout; namely, there are four sepals, four petals, eight stamens (two sets), and four pistils.

Next let us touch upon the plan which connects the plant with the animal world. The wonderful adaptations of many flowers and insects to each other, as to the fertilization of the former, and as to the life of the individual insect and the propagation of its kind, are evidence of design. For example, there are certain species of plants that are dependent for their fertilization on certain species of moths which live in the flowers, and the moths, in turn, are dependent on the plants. They deposit their eggs in the ovaries of the flowers where the young are hatched and nourished. The moths in some cases carry the pollen and place it on the stigmas of the flowers, as if guided by intelligence. So marvellous are the provis-

ions which are made to ensure the fertilization of plants that the dean of Amercan botanists, Professor Asa Gray, exclaims: "If these structures and their operations do not argue intention, what stronger evidence of intention in nature can there possibly be? If they do, such evidences are countless, and almost every blossom brings distinct testimony to the existence and providence of a Designer and Ordainer, without whom, we may well believe, not merely a sparrow, not even a grain of pollen, may fall." (On this entire subject read Selina Gaye's *"The Great World's Farm,"* published by the MacMillan Co., New York.)

We can only lightly touch on the wonders of design in the structure and functions of animals. Here is a feather, any feather, say, the feather of an eagle. We quote the following on "One of Nature's Wonders—the Feather" from an article in a popular magazine:

"To most people a feather is just a feather, either pretty or plain according to how the coloring strikes their individual fancy. Yet when a feather is examined critically, it becomes a wonder and yet more wonderful—it is amazing when its details are understood. Never was there a thing better planned and builded for the uses intended.

"Take, for instance, a plain feather—say the tail feather of an eagle. The long quill is made of featherbone, that wonderfully light, yet strong material that forms the rigid part of all feathers, so tough that it is almost impossible to break it, yet so flexible it will bend into a circle and then spring back like a bit of whalebone! Nothing that man has ever been able to make can equal it.

"There is no blood, no nerves, no circulation and apparently no life in a full grown feather, yet it does not decompose; indeed, it is one of the hardest things in the world to destroy by any process of decomposition. It

retains its resiliency and all its flexibility for years—all that is necessary is to keep it dry. It is finished all along the rib (or quill) with a hard, glossy enamel on the outside and this enamel keeps its polish as long as the feather lasts.

From an engineering standpoint, or the standpoint of the mechanic or artisan, there is absolutely no suggestion of betterment to be made, for the feather is an exact, perfectly finished product. Its long central quill tapers from base to point with geometric precision, thereby giving perfect resistance to bending force, and this is one of the combination of secrets that enables the bird to fly as easily as man can walk. Also this long quill is hollow, thereby all extra weight is done away with and added strength gained because of the tube contruction; and to make it perfect from a mechanical standpoint, the under side of the quill is reinforced by a doublerolled thickening of the shell of the quill itself so that strains are equalized.

"This long quill is also curved slightly, to meet air resistance again and overcome it when the whole tail is spread, fan-like, to suddenly alter a direction or check speed in flight.

"The long, soft side masses are formed of a multitude of tiny feathers, each one perfectly equipped, perfectly made, mechanically and geometrically without fault. Each of these tiny side feathers has its own midrib that tapers from base to tip, and each of these midribs carries its own equipment of side 'hairs' so beautifully constructed that it locks automatically into the one on each side of it in such a way that it makes a solid yet flexible mass of the whole surface, against which the air flows as the bird flies.

"If these side feathers be split apart they will come back into place so exactly that the split cannot be detected. Nothing else in nature repairs itself with such

precision. Many things, for instance the claw leg of the crawfish, will replace itself exactly when destroyed, but the feather alone *repairs* its own breaks precisely and automatically.

"Taken as a whole, the feather is one of the most perfect products of nature because the material used is the one best thing throughout, the engineering principles involved are without fault, the mathematical plan is precise, the construction is perfect, the coloring and artistry are flawless, and there is not one single point about it that can be constructively criticized.

"This short article can only hint at the wonderful things one may find in a single feather, and it is something well worth not an hour, but weeks or months of the most painstaking and careful study, for it covers an amazing field."

The electric battery in certain fishes is so palpable a case of design that Charles Darwin admitted his inability to account for it by Natural Selection. The electric ray, or torpedo, for instance, has been provided with a battery which, while it closely resembles, yet in the beauty and compactness of its structure, it greatly exceeds the batteries by which man has now learned to make the laws of electricity subservient to his will. In this battery there are no less than 940 hexagonal columns, like those of a bee's comb, and each of these is subdivided by a series of horizontal plates, which appear to be analogous to the plates of the batteries used in automobiles. The whole is supplied with an enormous amount of nervous matter, four great branches of which are as large as the animal's spinal cord, and these spread out in a multitude of thread-like filaments round the prismatic columns, and finally pass into all the cells. "A complete knowledge of all the mysteries which have been gradually unfolded from the days of Galvani to those of Faraday,

and of many others which are still inscrutable to us, is exhibited in this structure." Well may Mr. Darwin say, "It is impossible to conceive by what steps these wondrous organs have been produced. We see the purpose—that a special apparatus should be prepared; but we have not the remotest notion of the means employed. Yet we can see so much as this, that here again, other laws, belonging altogether to another department of nature—laws of organic growth—are made subservient to a very definite and very peculiar purpose.'

"The new-born kangaroo," says Professor Owen, "is an inch in length, naked, blind, with very rudimental limbs and tail; in one which I examined the morning after the birth, I could discern no act of sucking; it hung, like a germ, from the end of the long nipple, and seemed unable to draw sustenance therefrom by its own efforts. The mother accordingly is provided with a peculiar adaptation of a muscle (*cremaster*) to the mammary gland, by which she can inject the milk from the nipple into the mouth of the pendulous embryo. Were the larynx of the creature like that of the parent, the milk might, probably would, enter the windpipe and cause suffocation: but the larynx is cone-shaped, with the opening at the apex, which projects, as in the whaletribe, into the back aperture of the nostrils, where it is closely embraced by the muscles of the 'soft palate.' The air-passage is thus completely separated from the fauces (mouth), and the injected milk passes in a divided stream, on either side the base of the larynx, into the oesophagus. These correlated modifications of maternal and foetal structures, *designed* with especial reference to the peculiar conditions of both mother and off-spring, afford, as it seems to me, irrefragable evidence of *creative forsight.* The parts of this apparatus cannot have produced one another; one part is in the mother, another part in the young one; without

their harmony they could not be effective; but nothing except design can operate to make them harmonious. They are intended to work together; and we cannot resist the conviction of this intention when the facts first come before us."

We cannot stop to pass in review the structural marvels of the human eye and ear, of the digestive organs, and circulatory system of animals, of adaptations of fishes to the watery element. But we must mention an outstanding feature of all animal life, the evident likeness of plan upon which the *entire kingdom* of sentient life is constructed. From amoeba and other infusorial animals of simplest structure, through coral and oyster, bird, reptile, to mammals, there is an evident gradation, many structures being represented in entire great groups of living beings, such as the air-breathing lung. Here is a grand plan of animal life, which permits us to classify all living things into a system. There are classes and subclasses, orders or families, suborders, tribes, subtribes, genera, species, and varieties, just as in the world of plants and even, according to their atomic weight, among the elements. We see in all this, Creative Design. The evolutionist believes that he can perceive stages of progress. Similarity of plan is interpreted as proof that there is a common origin. Are we to admit, in the face of all that has been said about the fixity of species (to mention only this), the reasonableness of such an assumption? Does orderliness and plan argue for development? The steam-engine is a machine of remarkable structure. It has had, in one sense of the term, a wonderful "evolution." It is based on certain principles, the foundation one of which is the expansibility of steam, and its ability, when confined in a cylinder, to give motion to a piston. The steam-engine was first used for pumping, then for turning machinery, then for propelling boats, and now its crown-

ing department is seen in the locomotive. There is a plan, a likeness, a similarity, which runs through all steam-engines, whether they be found in the mine, in the mill, beneath the deck of the steamship, or on the railroad track. But the locomotive is not formed from the mine engine; it is made new, and is a distinct type. And yet, the same principles are seen in both. Even so it is with the genera of animals. The whale and the elephant both have backbones, jointed limbs, warm blood, and a hundred homologous organs. They are both mammals, both are sagacious, and are gifted with acute senses. But otherwise they are unlike as the monster locomotive that pulls the heavy train over the Sierras, and the compound engines of the *Vaterland*. Similarity of structures argues powerfully for unity of plan, but by no means proves identity of origin.

The evidence of design in nature conflicts with the idea that all things in the organic domain have come to be what they are by chance. But it agrees perfectly with the Christian view of animal nature. What is that? It is that God created the different classes of existences in the strict sense; that is, that he created them separate classes and species, each with its own peculiarities and habits, while, at the same time, they rise one above the other in general and steady order, with certain general organs and functions, which run through nearly all except the lowest classes, each higher class having also some distinct and additional peculiarities not found in those below it. In other words, to the Christian the steadily ascending scale in the work of creation is only the unfolding or development of the great plan of creation that was in the mind of God. He believes that God did not create one or more simple cells or germs, and cause all higher forms to be evolved from them, interfering only once or twice (when the backbone appeared,

the nourishing breast, the mind of man, etc.), but that he, in the execution of his plan, created successively as distinct orders and species those things and beings which now exist as distinct orders and species, and many of which have become extinct. This is the Story of Creation as given in Genesis: Each plant, each animal, created in its own place in the scale of living thing, but each created as a species,—"after their kind," the phrase repeated after each creative act of the third, fifth, and sixth day, except with reference to man, who was not created as a "species" but after the image of God.

But the evidences of design are yet of a higher nature than we have so far considered. There is not only Creative Intelligence at work in the pollen of flowers, the breathing of sponges, and the eagle's orb of vision; Mind dominates *the universe as a whole.* Everywhere there is law and periodic, rhythmical motion. The Lord, speaking to Job, refers to the "measures" of the earth, the "lines" which He has stretched upon it. He asks, concerning the heavenly bodies: "Canst thou bind the sweet influences of Pleiades, or loose the bands of Orion? Canst thou bring forth Mazzaroth in his season? Or canst thou guide Arcturus with his sons?" And Job answers: "I know that Thou canst do everything."

And so there is a Reign of Law in the dew on the grass (Job 38, 28), and in the revolutions of the heavenly bodies. The Universe is ruled by Mind.

Professor Koelliker (Leipsic) says in his work *"Ueber die Darwinsche Schoepfungstheorie"* (1904): "The development theory of Darwin is not needed to enable us to understand the regular harmonious progress of the complete series of organic forms from the simpler to the more perfect. The existence of general laws of nature explains this harmony, even if we assume that all beings have arisen separately and independent of one

another. Darwin forgets that inorganic nature, in which there can be no thought of a genetic connection of forms," that one form of crystal, for instance, arose out of another, "exhibits the same regular plan, as the organic world (of plants and animals), and that, to cite only one example, there is as much a natural system of minerals as of plants and animals." We can go a step farther and say that there is system and orderly design even in the position and movements of the stars,—which certainly have not been evolved one from the other.

More marvellous still, we are permitted to believe that there is an identity of plan connecting the arrangement of atoms in a molecule and the position of the stars and planets. Dr. Charles Young, Professor of Astronomy in Princeton College, says in his larger text-book upon his special theme that "our planetary system (the sun and planets) is not a mere accidental aggregation of bodies," that "there are a multitude of relations actually observed which are wholly independent of gravitation." In other words, in the position and motions of the planets there are evidences of design which cannot be accounted for by natural law. We shall point out an instance of such arrangement,—the progressive distance of the planets from the sun, as first discovered by Titius of Wittenberg, and later (in 1772) brought to the attention of the scientific world, by Johann Bode, the celebrated German astronomer. It is exhibited by writing a line of nine 4's and then placing regularly increasing numbers under the several 4's, beginning with the second. Thus 3, 6, 12, 24, 48, 96, 192, and 384, each increased by 4, will give the resultant series, 4, 7, 10, 16, 28, 52, 100, 196, 388. These numbers divided by 10 are approximately the true distance of the planets from the sun in terms of the radius of the earth's orbit, with the exception of Neptune. Hence there is, in the arrangmeent of the planets, as or-

derly a system as we have noted with reference to the leaves on a plant. Any rational man on earth, finding an orderly system of materials arranged in such relation by such means, would instantly conclude that it must be due to intelligence and not to mere chance.

Now, it is a remarkable fact that in the so-called Periodic Law of the elements constituting matter the same relation is observed. Of the eighty elements, no two now known have exactly the same capacity to resist heat, and no two atoms of the same elements have the same weight as compared with an atom of hydrogen. But these differences in resistance to heat and in weight, are not haphazard, but are so regularly progressive that they can be arranged in a series of regularly progressive increasing intervals. Most marvellous of all, however, when these differences in specific gravity are examined, we find that they bear a close resemblance to the arrangement of the planets in progressive distances from the sun. "There appears to be one law for atoms and for worlds."

Again we ask, when there is such orderly arrangement and plan throughout nature, should the orderly plan of plant and animal life be regarded as a proof of evolution? Certainly, atoms have not evolved from atoms, nor planets from planets.

And again, since omnipotence alone can account for the "sweet influences of the Pleiades," the "bringing forth of Mazzaroth"—the constellations of the heavens in their nightly revolutions,—why resist the conviction that omnipotence, voiced forth in the beginning, accounts for the life on earth that now exists?

One more consideration, and we have done. Life on earth exists only through a combination of very complex physical conditions. These conditions are such as cannot, in their combination, be referred to chance,

Fairhurst says, in his *"Organic Evolution Considered:"* "The simple substances which constitute the earth are of such kinds and are found in such relative quantities as not only to render life possible, but also to contribute to the well-being of man as an intelligent and moral agent. I look upon the concurrence of all these things, according to any theory of *chance,* as being entirely impossible. The conditions that must be fulfilled before living beings are possible are so complex that *nothing short of the wisdom of a Supreme Intelligence could have produced them."* (cf. Rom. 1, 20.)

This view has found support in a most unexpected quarter. No less a person than Alfred Russel Wallace, famed as the discoverer, independently of Darwin, of the principle of Natural Selection, in his last book, *"Man's Place in the Universe,"* (1903) defended a position so subversive of every cherished belief (or unbelief) of scientists that it easily ranks as the greatest literary sensation, in the domain of natural science, of the century. Wallace assembled all the latest astronomcial and other scientific discoveries and all knowledge bearing on the subject announced in his title. He deduces therefrom the theory:—First, that the earth or solar system is the physical center of the stellar universe. Second, *that the supreme end and purpose of this vast universe was the production and development of a living soul in the perishable body of man.*

"Modern skeptics," says Wallace, "in the light of accepted astronomical theories (which regard our earth as utterly insignificant compared with the rest of the universe) have pointed out the irrationality and absurdity of supposing that the Creator of all this unimaginable vastness of suns and systems should have any special interest in so pitiful a creature as man, an imperfectly developed inhabitant of one of the smaller planets attached

to a second or third rate sun, while that He should have selected this little world for a scene so tremendous and so necessarily unique as to sacrifice His own son in order to save a portion of these miserable sinners from the natural consequences of sins, is in their view a crowning absurdity, not to be believed by any rational being."

We cannot follow Mr. Wallace's argument in detail. Suffice to say, that he adduces a vast amount of data showing, first, that the universe is not infinite, but has certain bounds, and that our earth and its system are in the center of it, and, secondly, that the entire purpose of the production of the universe is the human race. The earth, says Wallace, is the only body capable of sustaining life. Life is not possible on any of the planets, because they are either too close or too far distant from the sun; some are probably composed of gas. He proves, on the basis of accepted calculations, that of all the stars in the heavens there is not even a remote probability that any are attended by bodies which can provide the elements of life. Now, he says, this very peculiar position of the earth cannot have been due to accident. He refuses to believe that the earth should occupy this favored position "as the result of one out of a thousand million chances."

"On the other hand," he says, "those thinkers may be right who, holding that the universe is a manifestation of mind, and that the orderly development of living souls supplies an adequate reason why such a universe should have been called into existence, believe that we ourselves are its sole and sufficient result and that nowhere else than near the central position in the universe which we occupy could that result have been attained."

This conclusion of Mr. Wallace has, indeed, not found acceptance among scientists. Naturally not. If a materialistic conception of the universe is to prevail, if evolution in some form is to be accepted, we must have a uni-

verse of chance, not of a plan which spans the remotest star and the soul of the new-born infant in one tremendous arc. But it is highly instructive to observe how the scientists in 1903 met Wallace's argument. One very distinguished reviewer said:

"*Too little is known,* the most essential astronomical theories are too much *a matter of conjecture,* to give much strength to a theory built up entirely of *such conjectural materials.* The argument from *probabilities* can easily be turned against the author, for when a chain of reasoning depends upon *a long series of problematic premises,* the doubt of these premises increases in a mathematical ratio. Weakness in an argument is as cumulative as strength and while such of Dr. Wallace's conclusions taken separately may receive the support of eminent scientists, hardly any of them has received such demonstration as to entitle it to unreserved credence."

This, at last, is a frank admission. Wallace quoted the generally accepted results of scientific calculation and research. On the basis of these results he demonstrates that the entire object of Evolution (to demonstrate the development of all things by natural causes, without a directing Intelligence), is negatived by a proper consideration of "ascertained data,"—since these data, taken all together, prove a stupendous plan behind all natural phenomena, and the end of this plan, the human soul. In rebuttal we are now told that "the most essential astronomical theories"—as e. g. the Copernican System, Herschel's laws, the Newtonian theory of gravitation,—"are matter of conjecture" (in plain English, are blind guesses), are "problematic," and "hardly any entitled to unreserved credence."

Thus do we find, that the greatest of Darwinians, on a mature consideration of the subject, reached a conclusion which makes evolution as a theory quite unnec-

essary; he found that the world is ruled not by blind forces inherent in matter but by Supreme Intelligence. And in their effort to keep themselves from being engulfed in the apostacy of a great leader, the scientists, as by a unanimous chorus, announce that the scientific dogmas which enter more or less essentially into their atheistic conception of the universe, are nothing but surmises!

What reason has a Christian to surrender his faith on account of the contradiction of scientists? He has the oracles of God, the sure Word of Him Who created all things in six natural days. And if he but escape the fascination of scientific speculations, and study the works of God without bias, he will find in Nature nothing that does not agree with the Book.

CHAPTER TWELVE.

The Fatal Bias.

If the theory of evolution is contradicted as we believe by the data of experimental science, by the history of civilization, by the facts especially of religion, more especially of Christianity, then the question is justifiable: Why do scientists uphold the evolutionary theory in some form or other, in spite of such absence of proof and such insufficiency of the hypothesis?

In answering this question let us first observe that scientists do not stand opposed to Christian belief *as representatives of science.* It is not science, but the scientists, not geology, but the geologists, not physics, but the physicists that oppose Christian theology. In other words, there is no conflict between the *facts* of science and the facts of revelation. Why should one not be able to maintain Christian faith though one accept the fact that the volume of expired air is one-fifth less than the inspired air; that plant substance is composed of cells; that Halley's comet returns to our system every seventy-five years; that Sicily was part of the Roman Empire in the time of Augustus? These physiological, botanical, astronomical, and historical facts are not in conflict with the religious beliefs based on Scripture. The same holds good with reference to the so-called laws of nature. These "laws" are but group-names for certain phenomena. Thus we speak of the law of gravity, of the conservation of energy, the Laws of Charles and Mariotte regarding gaseous bodies, zoological laws, physiological, and psy-

chological laws. A book which merely records and classifies these laws and describes the phenomena underlying them, is a truly scientific book, yet the acceptance of all that it contained would not force the surrender of any point of Christian doctrine. Hence we say that there is no contradiction between science and theology, between nature and religion.

It is otherwise with the *constructions and the interpretations* which the scientists place upon the facts of science. For instance, there is an evident similarity of structure in many animals; they are built on a similar plan; their organs have similar or even identical functions. These are simply facts ascertained by observation. Their acceptance does not place any burden on Christian faith. But scientists interpret these facts to mean that there is progressive development in animal and plant life. They have found certain laws (Natural Selection and others) by means of which they require only forces resident in matter to explain the universe. On their hypothesis there is no necessity of miracles nor need we believe in God. Observe, this is the result of speculation, not observation; interpretation of facts, but not a conclusion drawn from facts themselves. It is not science but scientists that are opposed to the Christian religion.

This view is supported also by the reflection that the history of speculative thought has ever revealed an anti-Christian intent and purpose, a fatal bias of scientists and philosophers against the teachings of Christianity. The modern anatomist and physiologist may declare that his science precludes the necessity of faith in God and of prayer; that through his research he has become a materialist, an atheist. But even in the Middle Ages, when practically all of anatomy and physiology was yet unexplored, the physicians of that day were as materialistic as those of our own. The medieval saying was: "Tres

physici, duo athei," "of every three physicians, two are atheists." The science of the Middle Ages differed very materially from the science of our own day. Is it not clear that the same result cannot be produced by causes so dissimilar? That materialism and atheism which scientists announce as a result, is really the starting point of their speculations. Otherwise, how account for the fact that physicists are, as a rule, gross materialists now as they were forty years ago, although all theories regarding the composition of matter have been radically altered since that day? Evidently, the modern scientist is not on account of his research and speculation induced to proclaim himself as agnostic; quite the reverse, the fact that on *any* system of physics, zoology, psychology, the conclusions remain the same, proves that these conclusions were in the mind before the facts were investigated. Unbelief is not a product of scientific and philosophic speculation, it is rather their origin and source. There is a settled purpose in relation to which the facts are classified and interpreted. Not all scientists are as honest as Huxley who announces this purpose in the introduction of his *"Science and Hebrew Tradition:"* "These essays are for the most part intended to contribute to the process of destroying the infallibility of Scripture."

Additional light is received from the observation that scientists adhere to their agnostic conclusions even after the premises have been found at fault, on which they based their conclusions. It is the end and aim of evolution to demonstrate that all processes of life and the history of living organisms may be accounted for without the assumption of a personal Creator. Thus the very beginning of our universe is accounted for (in the nebular hypothesis) by the origin of force and motion in matter. However, President Lowell, of Harvard, twenty years ago said that the nebular hyopthesis was "founded on a

fundamental mistake." (*"The Solar System,"* p. 119.) Do we find that scientists, though forced to surrender this prop, have given up atheistic evolution? By no means. Evidently, their atheism is older than their evolution.

Fifty years ago it was thought that in the heavenly bodies called nebulae the material of which the world was made had been discovered. It was assumed that these nebulae were worlds in the process of formation. In 1914 the scientists at Lick Observatory concluded, from the great speed at which the nebulae traveled, that they are the *remains* of worlds which *have been* or are passing, and are not the constituents of worlds to be. This destroyed another supposition favoring the theory, but we do not notice that scientists have become more friendly to Christianity. Or consider the latest speculations on the composition of matter as contained in the works of Lodge, Crookes, and Lord Kelvin. It is now believed that matter is composed of electrical particles smaller than atoms, called electrons. An atom of gold is said to consist of 137,200 electrons. Now, if one considers how closely physical theories are bound up with the principle of evolution, should we not expect scientists to renounce this principle when another stone in its foundation has been destroyed? And since there is no such renunciation, is it not plain that this class of scientists insists upon an atheistic interpretation of the universe, no matter on what hypothesis? For the slow increase of variations in plants and animals, by which Darwin accounts for the origin of species, the evolutionists demanded more than 400,000,000 years. But it is asserted on the strength of certain calculations by physicists that the earth cannot possibly have existed more than 40,000,000 years. This latter figure, based especially on the calculations of Lord Kelvin, caused doubts to be raised regarding evolution which

prompted many scientists to renounce it as a working theory. Rudimentary structures received attention, and as a result, St. John Mivart says: "It is an absolute fact that there is no instance of transmutation of species." Dr. Nathaniel S. Shaler, Professor of Geology in Harvard, wrote: "It is not proved that a single species of the two or three millions now on earth has been established by natural selection." Thus the evolutionary philosopher is compelled to relinquish one theory after another; the biologist knocks out the under-pinning, the geologists and physicists demolish most of the residue; yet the advocates of evolutionism adhere to their purpose to banish God from the universe. In this we have conclusive proof that what evolutionists pretend to find as the conclusion of their research, in reality was a settled conviction in their minds before they commenced their investigation, and to which, in their bias, they propose to hold fast, no matter what happens to the evidence once announced as final.

The warfare of philosophy against Christian faith is readily explained. Man is corrupt. He loves sin. He is conscious of his guilt and fears the penalty. Hence every avenue of escape is welcome, if only he can persuade himself that there is no God, that there is no judgment. Man is proud, he desires no Savior. Hence the tendency to prove that no Savior is necessary; that there is no guilt attaching to sin, that there is no absolute right and wrong. Hence, too, the doctrine of the agnostic, that we can ascribe no attribute to God. When we read the *"Synthetic Philosophy"* of Spencer, we are apt to believe that the agnosticism there set forth is the result of deep philosophic speculation. Nothing further from the truth. Man, even cultured, philosophic man, wants no restrictions placed upon pride and selfishness; hence it is necessary to rid the mind of the fear of divine justice; hence we have an interest in demonstrating that God

"has no attributes"—such as "just," for instance. The Psalmist describes this attitude: "Let us break their bands asunder and cast away their cords from us."

No man who has grasped the inner motive of all scientific effort to demolish faith can fail to understand why the rabble greets with such jubilant acclaim every new attack upon the Biblical narrative. No man who has pondered this motive can be ensnared in the net of science falsely so called. He has seen its inwardness, its fatal bias.

Thus a Christian may preserve an attitude of mental balance over against science. The Christian believer may admire the achievements of science without being carried away by the speculations of scientists. Great is the progress of modern medicine, so great, that even the past ten years have witnessed great advances in treating disease. Chemistry has developed greater marvels than was ever ascribed to the wizard's wand by Oriental poets. What astounding performances in applied science—the Panama Canal, the Hudson Tunnels, the development of the automobile and of the airplane, and the perfection of the telephone and the moving picture! We may exult in all these victories of mind over matter, and yet stoutly oppose those theories which would make of the mind which created all these marvels merely a development of the instincts of the ape.

It is possible, even, to be a scientist and in no wise compromise one's Christian faith and honesty of Christian profession. Wherever men have contented themselves with purely scientific research, with investigating and tabulating the phenomena of nature and establishing the laws of life and motion in the universe, they have found no difficulty in retaining a child-like faith. Among those scientists of the first rank who, far from being forced to the atheistic conclusion, recognized a wonderful

harmony between science and revelation, was a Kepler, who was led by meditations on the harmony of theology with mathematics to follow those laborious calculations by which he first established the orbit of Mars and then of other planets; among them was a Newton, called by Justus Liebig "the most sublime genius in a thousand years," who asserted that his entire system of mechanics was untenable without the supposition of divine Power; a Davy, prince of chemists, who "saw in all the forces of matter the tools of Divinity;" a Linnè, called by Prof. Fraas the "greatest naturalist of all times," who commences his "System of Nature" thus: "Awakening I saw God, the Eternal, the Infinite, the Omniscient, the Omnipotent, and I was amazed. I read some of His traces in creation. What unspeakable perfection!" We find in the roster of scientists who believed in an inspired Bible and a divine Savior, such men as Hans Christian Oerstedt, the great discoverer of electro-magnetism and the father of all modern electrical science, who declared that he "had but a desire to lead men to God by his books;" Lavoisier, father of modern chemistry, a Christian; Maedler, who reached the front rank of modern astronomers without relinquishing his childhood faith and who said: "A real scientist cannot be an infidel;" Ritter, greatest of geographers, who said: "All the world is replete with the glory of the Creator;" Virchow, the surgeon of world-wide fame, who all his life was an outspoken opponent of the evolutionary theory and whose last prayer, uttered in the presence of his fellow-scientists, was: *"Christi Blut und Gerechtigkeit . . . ."*

Speaking of the triumphant Redeemer the Lord says Isa. 53: "I will divide Him a portion with the great and He shall divide the spoil with the strong. The kings of the earth shall serve Him." The prophecy was fulfilled when kings not only on material thrones but kings in the

world of intellect and giants of learning have paid homage to the God-man Jesus Christ. Throughout the record of modern science and erudition there are shining examples of the truth that great mental power and profound research are not incompatible with humble acceptance of Bible teachings. The spiritual blindness of natural man, his intellectual pride, and the depravity of his will account for the attitude of many scientists over against the facts of revelation. From the shifting quicksand of their speculation we may rise unharmed on the pinions of a faith guided by the principle: "It is written."

THE END

APPENDIX.

THE NEW CONTROVERSY ABOUT EVOLUTION.

Once more the battle is raging about the theory of evolution. The discussion of this subject was a lively one fifty years ago, then gradually languished, and the past twenty years, to all appearances, was a dead issue. Evolution was an accepted fact. Now the magazines and the Sunday papers are again carrying long discussions of this subject, and the religious press is full of it. Undoubtedly the onslaught of Mr. W. J. Bryan has in a great measure contributed to this revival of popular interest in evolution. His powerful eloquence has caused a commotion in the universities where he addressed the students. But the cause of this new controversy lies deeper.

For the past twenty-five years the Christian Church in America has been disturbed by a coterie of infidel professors of theology, the Sadducees of the modern age. The infallible Bible and the divine Christ have been denied, every cherished belief of the Church has been scrapped, and the very Sunday-school manuals filled with the (evolutionistic) Higher Criticism of the Bible. Now the revulsion has come. Great scholars have arisen and have demonstrated the baselessness and dishonesty of this infidel propaganda. The churches are alarmed. Among Presbyterians there is an open demand for separation, and the Fundamentalists among the Baptists are marshaling the best intellect of that denomination in defense of Christian belief. And everywhere there is recognition of the fact that evolution is the great, impure mother of all this spawn of heresy and infidelity.

Glancing over the articles recently published in defense of evolution, we note that there is much ridicule, some patent dishonesty, and no proof.

The favorite weapon of the spokesmen for evolution is ridicule. There is reference to "a curious revival of medieval prejudice," the opponents are called "medievalists," "pancakes not turned," etc. Dr. Butler of Columbia University suggests facetiously that no book should be permitted even to contain the letters of the alphabet out of which the word "evolution" can be formed, — the kind of joke that raises a brave laugh from sophomores.

Then there is considerable dishonesty, conscious, it would seem. Prof. H. F. Osborn says that evolution is no longer a theory, but an accepted natural law; there has been "a flood of proof and truth." Prof. E. G. Conklin says that the brute origin of man is "proven conclusively," and refers us to the Neanderthal man and other fragments of bone, concerning which there is much speculation to the present day even among scientists. The reader is permitted to believe that the missing link has been found, hair, tooth, and claw, whereas all these "brute-men" together consist of a few brain-pans and leg bones, not enough to fill a Boston bag. In order to prove that churchmen may accept evolution, Dr. McCosh, the Princeton theologian of forty years ago, is referred to by Professor Osborn. Possibly this writer has never seen the following statement in McCosh's *Intuitions of the Mind*: "No living species can proceed except from a parent of its own kind, no vegetable or animal can spring from a vegetable or animal inferior to itself. In particular, human beings with intelligences, and such only, — certainly not apes or monkeys, — can have an offspring possessed of reasonable and responsible souls." (p. 190.) And again: "Mr. Darwin does not attempt to

show, and all attempts of others have failed to prove, that the law of selection or any other can account for the origin of life and the origin of man." (p. 157.) How can Professor Osborn quote Dr. McCosh for his cause? Let the reader weigh carefully chapter eight of the present volume, and then compare with the data there submitted the bold assertions of recent writers on evolution, as though any one form of the hypothesis were accepted by scientists generally, and he will understand the charge of dishonesty here made against those who assert "a flood of proof and truth."

There is, indeed, another reason for this sudden revival of efforts to maintain popular respect for the scientists who stand committed to evolution. Some very distinguished scientists have in late years openly declared that they are through with Darwinism, and that evolution itself is unproved, a mere theory. The man who has brought most sorrow to the evolutionists of late is Professor Bateson, President of the British Association for the Advancement of Science. Speaking in Australia a few years ago, Professor Bateson said that the (Darwinian) view of evolution by natural selection has not received "the smallest encouragement or sanction" from modern research. December 29, 1921, the same scientist said at Toronto before the American Association for the Advancement of Science that the origin of new species has never been observed: "From time to time a record of such an observation is published. But none has survived criticism." Professor Bateson holds to a *belief* in some kind of an evolutionary process, but knows of no "acceptable account" of the origin of species. So we have been right, the whole thing was a guess and a bad guess. Professor Osborn, however, in the *New York Times,* repudiates Professor Bateson's statement as "directly contrary to the truth," and explains this fall from

Darwinian grace by pointing out that Bateson is "living the life of a scientific specialist, out of the main current of biological discovery." How very strange! Professor Bateson is indeed a specialist — in biology, and evolution is a biological problem; in heredity — and evolution absolutely depends on heredity. And because Professor Bateson is a specialist, "his opinion is valueless"! What queer logic!

The fact is that there are two groups of thinkers who are determined to uphold evolutionism: First, a certain class of scientists who have still a living faith in the Nebular Hypothesis and the Neanderthal man. They cling to their creed. They are wedded to their idols. Then there are the New Theology men. Their idea of the Bible is based upon evolution, and if evolution falls, their whole system goes down in a heap. And so Charles S. Mac Farland, general secretary of the Federal Council of Churches, has come out against Mr. Bryan. And Prof. Charles E. Fosdick, professor in Union Theological Seminary, and one of the most distinguished Sadduceans of our day, writes a long article to the Sunday papers in which he proves that if you want to believe that God created man as related in Genesis, then you must believe that the heavens are an upturned bowl, and he quotes Ps. 104, 2. Why does he not quote the next verse, to prove that the ancient Jews believed that the water has "chambers" and the wind "wings"? Was ever poetry so made to walk on all fours?

But we said that the modern disciples of Darwin offer no proof. This must be modified, — they do *offer* proof, and the argument they produce is the *evolution of the horse*. Now, the geological history of the horse has been, these many years, a source of delight to the evolutionist. Fossil horses have been found that have four toes, others that have three, others with two; and

the horse to-day has only one, of which the hoof is the nail. There you see, say the evolutionists, the horse has evolved. Now, we shall not assert that animals have never changed their structure or habits. That there has been a development in nature, as in scientific breeding, of different *varieties* (not species) is very evident. But where is the proof that the four-toed horse, *which was no larger than a fox,* was ancestor to the modern horse? Remains of these horses have been found in successive layers of rock, — but who will assert that the four-toed horse no longer existed when two-toed horses lived? When the lack of missing links in all other animals is pointed out, the reply always is that "the geological record is incomplete"; but as to the horse we are to believe that the record is complete. Aside from this, how is it that the horse, in spite of sixty years of research, remains the only animal on which an argument for evolution can be built up? Wherever you look, in the textbooks and encyclopedias, there is the horse in its stages of evolution, and only the horse. But let us see where this evolutionistic reasoning would lead us in the case of other animals, known to exist contemporaneously.

The kangaroo varies in size from that of a sheep to that of a small lamb. There is the great gray kangaroo (*macropus giganteus*) and the great red kangaroo, about the same size. Then follow other species, in which the hind limbs are less disproportioned in length, then the small tree-kangaroos, in which the proportions of the fore and hind limbs are almost normal. Finally, there is the tiny musk-kangaroo, which has a movable first toe on the hind foot. Undoubtedly, if these various types would exist only in fossil form, their remains would be ranged in a chronological order in the museums, demonstrating to the eye how the kangaroo gradually lengthened its hind legs, the oldest having four legs of

entirely normal proportions, the final result of evolution being wonderfully illustrated in the enormous hind feet of the gray kangaroo!

Or consider the family of the antelopes, closely allied to the horse. The antelope varies in size from that of a small rabbit to that of an ox. If there were known only fossil specimens, the evolutionist would undoubtedly look upon the series as proof of development from the pigmy antelope of Guinea to the African water-buck and gnu. The antelopes differ widely in color and marking, in the size, shape, and angle of their horns, in length of tail, shape of teeth, of eyes, of nostrils, and in many other ways less evident. Some have larger hoofs, some small, some have an extra set of lateral hoofs, some have exceedingly long limbs, in others the fore legs are peculiarly modified. Yet it is very clear that the great staglike creature, the African water-buck, is not the descendant of the royal antelope, which is only a few inches high, as little as the gray and red kangaroos are the descendants of the kangaroo-rat.

Another animal which shows remarkable divergence of size and structure is the ant-eater of South America. The typical and largest representative of the group is an animal measuring four feet in length without the tail. Another species is much smaller and lives mainly in trees, while the great ant-eater is terrestrial in habits. Then there is the little, or two-toed, ant-eater, also a tree-dweller, and about the size of a rat. Now, these three species, so different in size and habits, exist to-day in various parts of South and Central America. If they existed only in fossil form, does any one question whether our evolutionists would resist the temptation to point out these various related forms as evidence of the evolution of the ant-eater from the little, two-toed species to the great ant-bear with its enormous development in struc-

ture and strength? And if various kinds of ant-eaters exist side by side to-day with not the slightest evidence that one has developed from the other, then why should it not be a fair assumption that also various types of the horse species have *existed side by side* in prehistoric times? The difference in size and structure between the various kinds of antelopes, kangaroos, and ant-eaters is at least as great and fundamental as the difference between the various prehistoric types of the horse.

When it is considered that the age of the rocks in which the fossil "ancestors" of the horse have been found is still a matter of dispute, the argument for evolution based on the development of the horse becomes very frail indeed. It must never be forgotten that the rocks are grouped by scientists, to a great extent, according to the evolutionary theory; in other words, rocks are called old when the fossil remains are of a simple type. As a matter of fact, there is no place on the surface of the earth where all the various layers of rock are found exactly in the order in which the text-books show the different "ages."

This digging in the earth to prove that God did not make it reminds us of Cowper's lines:—

> Some drill and heave
> The solid earth, and from the strata there
> Extract a register, by which we learn
> That He who made, and then revealed its date
> To Moses, was mistaken in its age.

In conclusion, let all those who believe that there is no antagonism between evolution and Christianity remember that evolutionists themselves admit that the whole fabric of Christianity tumbles down in ruins if evolution is true. And the results of this doctrine are all too evident. Addressing Moody Institute in Chicago, Mr. Bryan said:—

"What is the result of Darwin's theory? What, would you suppose, would be the result? Here is a boy reared in a Christian home, learning the first child's prayer and then the Lord's Prayer; he talks to God, asks for daily bread, pleads for forgiveness of sins, and desires to be delivered from evil. He reads the Bible and finds that the heavenly Father is more willing to give good gifts to His children than earthly parents are. Then he goes off to college, and a professor takes a book six hunderd pages thick and tries to convince him that his body is a brute's body. 'See that point in the ear? That comes from the ape,' etc. Darwin also tries to convince the child that there is nothing in the brain that is not found in miniature in the brain of the brute.

"Then he says that the morals of man are a development from the brute. First, second, third, fourth, fifth, sixth — and no mention of God or of religion. No mention of conscience. When the boy goes out from school, if he believes Darwin and believes his teacher, the Bible is to him a storybook. Christ is reduced to the stature of a man with an ape for an ancestor, on His mother's side, at least — and, as many teachers believe, on His Father's side also.

"Are you surprised when I tell you that within a month I met a young man twenty-two years of age who said he had been made an atheist by two teachers in a Christian college?"

A good answer to the evolutionistic view of creation was given by a Decatur, Ill., Baptist minister, whose little girl one day came home from school and said.

"Do you know, folks used to live up in trees like monkeys."

"Not your folks," the minister answered. "*Your* folks came down from God, not up from slime."

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